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**SUBMISSION OF THE CONSUMER ADVOCATE  
TO THE COMMISSION OF INQUIRY RESPECTING  
THE MUSKRAT FALLS PROJECT**

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1. The Commission of Inquiry Respecting the Muskrat Falls Project (the “**Inquiry**”) is an independent commission set up by the Government of Newfoundland and Labrador (the “**Government**”) by way of an Order-in-Council (O.C. 2017-339) (the “**Order-in-Council**”) pursuant to the *Public Inquiries Act, 2006*, SNL 2006 c. P-38.1, as amended (the “**Public Inquiries Act**”), to inquire into: the decision to sanction the Muskrat Falls Project (the “**Project**”); the construction and oversight of the Project’s progress and costs; whether exemption from oversight by the Commissioner of Public Utilities was justified and what impact, if any, such lack of oversight has had on the Project; and whether the Government was fully informed in relation to this Project at the time that it sanctioned the Project, and whether it kept appropriate oversight as regards the progress and costs of construction for the Project [**P-00002, page 1**].
2. The Consumer Advocate has been appointed under the authority of section 9(2)(a) of the *Independent Appointments Commission Act*, SNL 2016 c. I-2.1, Order-in-Council 2018-194 and section 117 of the *Public Inquiries Act* to represent the interests of domestic and general customers at the Inquiry. The Consumer Advocate was granted full standing and is a party participating at the Inquiry.

3. The Order in Council set out the Terms of Reference, which for the purpose of this submission are summarized as follows (the “**Terms of Reference**”):

The commission of inquiry shall inquire into

(a) the consideration by Nalcor of options to address the electricity needs of Newfoundland and Labrador’s Island interconnected system customers that informed Nalcor’s decision to recommend that the government sanction the Muskrat Falls Project, including whether

(i) the assumptions or forecasts on which the analysis of options was based were reasonable,

(ii) Nalcor considered and reasonably dismissed options other than the Muskrat Falls Project and the Isolated Island Option, and

(iii) Nalcor’s determination that the Muskrat Falls Project was the least-cost option for the supply of power to Newfoundland and Labrador Island interconnected system over the period 2011-2067 was reasonable with the knowledge available at that time;

(b) why there are significant differences between the estimated costs of the Muskrat Falls Project at the time of sanction and the costs by Nalcor during project execution, to the time of this inquiry together with reliable estimates of the costs to the conclusion of the project including whether

(i) Nalcor’s conduct in retaining and subsequently dealing with contractors and suppliers of every kind was in accordance with best practice, and, if not, whether



Nalcor's supervisory oversight and conduct contributed to project cost increases and project delays,

(ii) the terms of the contractual arrangements between Nalcor and the various contractors retained in relation to the Muskrat Falls Project contributed to delays and cost overruns, and whether or not these terms provided sufficient risk transfer from Nalcor to the contractors,

(iii) the overall project management structure Nalcor developed and followed was in accordance with best practice, and whether it contributed to cost increases and project delays,

(iv) the overall procurement strategy developed by Nalcor for the project to subdivide the Muskrat Falls Project into multiple construction packages followed industry best practices, and whether or not there was fair and competent consideration of risk transfer and retention in this strategy relative to other procurement models,

(v) any risk assessments, financial or otherwise, were conducted in respect of the Muskrat Falls Project, including any assessments prepared externally and whether

(A) the assessments were conducted in accordance with best practice,

(B) Nalcor took possession of the reports, including the method by which Nalcor took possession,

(C) Nalcor took appropriate measures to mitigate the risks identified, and

(D) Nalcor made the government aware of the reports and assessments,  
and

(vi) the commercial arrangements Nalcor negotiated were reasonable and  
competently negotiated;

(c) whether the determination that the Muskrat Falls Project should be exempt from  
oversight by the Board of Commissioners of Public Utilities was justified and reasonable  
and what was the effect of this exemption, if any, on the development, costs and  
operation of the Muskrat Falls Project; and

(d) whether the government was fully informed and was made aware of any risks or  
problems anticipated with the Muskrat Falls Project, so that the government had  
sufficient and accurate information upon which to appropriately decide to sanction the  
project and whether the government employed appropriate measures to oversee the  
project particularly as it relates to the matters set out in paragraphs (a) to (c), focusing on  
governance arrangements and decision-making processes associated with the project.

4. Further to the Terms of Reference, the Inquiry was instructed to consider the following:

(a) participation in the inquiry by the established leadership of Indigenous people, whose  
settled or asserted Aboriginal or treaty rights to areas in Labrador may have been  
adversely affected by the Muskrat Falls Project;

(b) the need to provide consumers in the province with electricity at the lowest possible  
cost consistent with reliable service;

(c) the powers, duties and responsibilities of a Crown Corporation;

(d) the need to balance commercial considerations and public accountability and transparency in carrying out a large-scale publicly-funded project; and

(e) the need to balance the interests of ratepayers and the interests of taxpayers in carrying out a large-scale publicly- funded project.

5. Relevant evidence and submissions are organized herein pursuant to the Terms of Reference.

However, it is noted much of the evidence and many submissions have relevance to multiple sections of the Terms of Reference. Rather than repeat evidence and submissions under each relevant Term of Reference, however, the most relevant section of the Terms of Reference was selected.

6. Throughout this submission, references to the “Interconnected Option”, the “Muskrat Falls Project”, the “Project” and “Muskrat Falls” will be used interchangeably. References to exhibits filed at the Inquiry will be in square brackets with the format: **[exhibit number, page reference]**. References to witness testimony will be in square brackets with the format: **[witness name, date of testimony, page reference from the transcript]**.

***Section 1: The consideration by Nalcor of options to address the electricity needs of Newfoundland and Labrador's Island interconnected system customers that informed Nalcor's decision to recommend that the government sanction the Muskrat Falls Project***

7. The evidence put forward at the Inquiry demonstrates that: (i) decisions regarding assumptions and forecasts were skewed to benefit Nalcor's choice to proceed with the Interconnected Option; (ii) Nalcor framed the decision as an either/or choice between two specific pre-determined options, and dismissed or failed to reasonably consider options other than the Interconnected Option and the Isolated Island Option; and (iii) the Interconnected Option was not the lowest-possible cost for the supply of power, and furthermore, the use of the period 2011-2067 to determine the cost of power was inappropriate, if not contrived.

***Section 1.1: Whether the assumptions or forecasts on which the analysis of options was based were reasonable***

8. The evidence taken in totality demonstrates a concerted effort to favour the Interconnected Option over all other options, including specifically the Isolated Island Option. To analyse this issue, Nalcor used a concept called cumulative present worth ("CPW"), which essentially is a method for comparing costs of alternative supply options. Grant Thornton concluded that there was: (i) a "potential overstatement of the CPW for the Isolated Island Option; and (ii) a "potential understatement of the CPW for the Interconnected Island Option" and that the "combination of these potential misstatements may have resulted in the Interconnected Island Option (the actual option selected by Nalcor) no longer being considered the least cost option at time of sanctioning" [P-00014, page 68]. Unreasonable assumptions and forecasts that favoured the Muskrat Falls Project were used to support the proponent's position that it was the better choice

for ratepayers. Throughout the Inquiry, a pattern developed which demonstrated a preference for the Interconnected Option. Some examples are as follows.

9. **Load Forecasting**: Nalcor used statistical regression, econometric or top-down modelling for its load forecasting for residential and general customers as opposed to end-use modeling techniques [Stratton, 26 September 2018, pages 8-9]. The MHI Report at DG2 states that “Best utility practices would incorporate end-use modeling techniques into the forecasting process so that electricity growth can be quantified for all major domestic end-uses” [P-00048]. Nalcor, therefore, did not use best utility practice for forecasting.
10. The program Nalcor used for conducting the CPW analysis at DG2 and DG3 was a program called Strategist, which was approved and supported by a company called Ventyx [Moulton, 25 September 2018, page 52]. Nova Scotia actually retained Ventyx, the maker of the Strategist software, to do the CPW calculation for the Maritime Link, but Nalcor did its own CPW calculations in-house [Moulton, 26 September 2018, page 23]. In the case of the load forecasting used to justify the Muskrat Falls Project, Nalcor did not retain outside expertise, but essentially left the forecasting to one individual – Paul Stratton (“Stratton”), a senior market analyst with Newfoundland and Labrador Hydro (“NL Hydro”).
11. Stratton’s load forecasts were based on an assumption the Newfoundland and Labrador economy would continue to grow for 56 years [Stratton, 26 September 2018, page 14]. Stratton stated that he relied on the Government for macroeconomic forecasts (for load forecasting) [Stratton, 26 September 2018, page 6]. Stratton used Government data for load forecast inputs

rather than use data from the Conference Board of Canada (“CBC”) and Statistics Canada for housing starts and for population growth. The CBC and Statistics Canada forecasts were more conservative than those of the Government in terms of economic growth drivers. Stratton acknowledged he did not consider multiple sources (i.e. CBC, Statistics Canada) when preparing his load forecasts and that he chose NL Government data because he believed it to be more credible **[Stratton, 26 September 2018, pages 62-63]**.

12. When assessing the potential growth of electric heat in this province, Stratton used Quebec as a comparator for saturation levels for people switching to electric heat. Quebec is not an appropriate comparator given that Quebec’s electricity prices are among the lowest in the country and significantly lower than in this Province **[Stratton, 26 September 2018, pages 85-86]**. Stratton was predicting high saturation levels for electric heat as the cost of electric heat based on the presumption oil heat prices would continue to be higher than electric, making electric heat more attractive for customers. Nalcor opined this trend would continue based on its 56-year forecast for the price of oil and its corresponding conclusion of continued growth in the domestic use of electric heat, even though most forecasts are generally limited to not longer than 20 years **[Stratton, 26 September 2018, pages 24, 65-66]**.
13. It is generally accepted that forecasts beyond 20 years are meaningless, however, Stratton did not recall expressing any reservations or concerns when asked to do a 56-year load forecast **[Stratton, 16 September 2018, page 64]**. According to Peter Alteen (“Alteen”), Vice President and CEO of Newfoundland Power, a 50-year forecast strikes him as a long time because it means there is a lot of room for forecast error when predicting that far into the future. Alteen testified

Newfoundland Power does five-year forecasts [**Alteen, 17 December 2018, pages 25-26**]. Multiple other witnesses during the Inquiry were critical of trying to base decisions on a 56-year forecast, including Stan Marshall, current CEO of Nalcor, and Maureen Greene ("**Greene**"), legal counsel to the Public Utilities Board (the "**PUB**") - both of whom have worked in the utility sector for many years [**Greene, 24 October 2018, page 121; Stan Marshall, 2 July 2019, page 19**]. Philip Raphals ("**Raphals**"), Executive Director of the Helios Centre, testified that he was "not aware of any normal utility planning that goes farther out than 20 years" [**Raphals, 11 October 2018, page 69**]. The "idea that 50 years out we have any idea what the world is going to be like is just fantasy" [**Raphals, 11 October 2018, page 69**].

14. There was never a formal review of Stratton's load forecast, just casual discussions between Stratton and his predecessor, Stephen Goudie [**Stratton, 26 September 2018, pages 39 and 58**]. In preparing the load forecast for the 56-year period to 2067, Stratton did not confer with or seek input from Newfoundland Power. Alteen testified that Newfoundland Power has never done a 50-year forecast; rather, Newfoundland Power does five-year forecasts "which are quite reasonably accurate; they're reviewed publicly on a routine basis. So we've not been involved in this broader or longer term forecast. And as a matter of fact, we were never consulted on this forecast or the reasonableness of it, prior to our first seeing it" [**Alteen, 17 December 2018, page 18**]. Former Premier and former Minister of Natural Resources Kathy Dunderdale ("**Dunderdale**") stated that it "never crossed my mind" that Newfoundland Power would not have been talking to Nalcor and assumed there were ongoing discussions, and therefore never

saw a need for her approach anyone at Newfoundland Power [Dunderdale, 20 December 2018, page 18].

15. The forecasts prepared by Stratton were used to expedite the decision to sanction Muskrat Falls. It was on this basis that former Cabinet Minister and Former Premier Thomas Marshall testified he was aware of, but disagreed with, an information note of three civil servants expressing the view that sanction should be “delayed a year or two to allow a full assessment of alternatives and a complete analysis of the potential burden to taxpayers if development of Muskrat Falls has substantial cost overruns” [P-00922]. Thomas Marshall reasoned that the Government could not delay sanction because the Province needed power and without it there would be outages. The fear of imminent power shortages starting in 2015 was cited often by those in favour of building the Muskrat Falls Project [Thomas Marshall, 6 November 2018, page 42].
16. Given the Government’s reasoning that imminent power shortages meant an immediate need for new power which necessitated no delays in proceeding with the Muskrat Falls Project, one would think that the forecasted need for power would be based on more thorough and robust analysis. However, the Government relied on a forecast carried out in-house at Nalcor/NLH by a single individual who had never previously carried out a 56-year forecast. It is unprecedented and outside normal utility practice to rely on a 56-year load forecast. It is worth noting that, except for the occurrence of DarkNL in January 2014, the predicted power outages never materialized.



17. Load sensitivity analysis, to assess what would happen to the CPW calculations if the forecast load changed, were run at DG2 in 2010 but Nalcor chose not to continue with sensitivity analysis at the critical DG3 juncture [Humphries, 13 November 2018, page 33; Moulton, 26 September 2019, page 54]. The analysis was not done despite the fact that additional load sensitivity analysis was a DG3 requirement deliverable [P-00121, page 189]. Bob Moulton (“Moulton”), a senior system planner with NL Hydro, Auburn Warren (“Warren”) an investment evaluator at Nalcor, and Stratton were asked, given that the effect of the variability in load forecasting is magnified over for forecasted five decades, why load sensitivities were not been run before DG3. None of them could provide an answer to this question [26 September 2018, page 54].
18. Load forecasting was a significant driver used to justify the need for Muskrat Falls. In fact, in public the proponents consistently asked the question: do we need the power? However, there was a failure on the part of Nalcor to not conduct load sensitivities at DG3. The reason for this is that Nalcor, for its own reasons, seemed satisfied with the DG2 analysis.
19. **Price Elasticity:** Price elasticity – which deals with the effect price has on demand - was not included in the Planning Load Forecast for the general service/commercial customer sector of NL Hydro’s utility customer, Newfoundland Power, or for NL Hydro’s Island industrial customers [P-00014, page 36]. Grant Thornton confirmed that “good utility practice for determining load forecast would include consideration regarding price elasticity” [P-00014, page 36].
20. An elasticity study was conducted by economist Dr. James Feehan in 2018 which showed that at 17 cents per kilowatt hour (“kWh”), other heating options become more appealing to customers

[P-00326, page 11]. Nalcor projected rates would be between 15 and 16 cents per KWh once Muskrat Falls was operational [Warren, 26 September 2018, page 83] and that rates would have to be 65-70% higher than that before market share for electricity would flatten [Stratton, 26 September 2018, pages 83-84]. Simple math means that Nalcor's internal estimates and projections were that customers would in fact only seek alternatives when rates reached 25 to 26 cents per kWh, which is much higher than the number calculated by Dr. Feehan.

21. An assumption was made by Nalcor that the Interconnected Option would result in a slight bump in the price of electricity followed by a slight decline [Stratton, 26 September 2018, pages 84-86]. When asked if Nalcor ever considered what would happen if prices increased instead, Stratton indicated he did one analysis of what would happen with a 30% cost increase in the Interconnected Option:

And that would've told me that the economy was so strong at that time – that the forecast growth in the economy was so strong and the price of oil was expected to be so high that it would not have – it would have reduced growth, but it would not have reduced growth substantially. The system would have still grown [Stratton, September 26, 2018, page 85].

22. There was a failure on the part of Nalcor in not obtaining independent experts to conduct elasticity studies to determine the effect price increases would have on demand. Nalcor was overly optimistic and failed to consider what could happen if its internal assumptions did not hold true. Given that the ratepayer was paying for the entire cost of the Project regardless of cost overruns, there should have been an analysis conducted to determine the effect cost overruns would have on the system. The evidence is that when the cost becomes too much, people will find alternatives, thereby making it more expensive for the remaining utility customers who do

not abandon electric heat. These remaining customers may then also leave the system because of continuing cost increases, creating what is known as a “death spiral”, which was described by Alteen:

The Muskrat Falls costs, once they’re incurred, are fixed. And if we think that the solution to recovering those costs is simply to raise rates to 22 or 23 cents a kilowatt hour until we get to the math that works, we’re going to find, I suspect, that demand is going to drop significantly. And to make up the additional amount of fixed costs associated with the reduced demand, we’ll have to increase the price again. That will cause a further reduction in demand. That type of cyclical effect is a well-known phenomenon in the electricity sector. Some dramatically call it the utility death spiral [Alteen, 16 July 2019, page 11].

23. **Conservation and Demand Side Management:** An input and forecast which Nalcor failed to consider was conservation and demand side management (“CDM”). Raphals testified that NL Hydro does not deduct usage from its load for CDM, which is not normal and is a “very grave flaw in the planning process.” In fact, “CDM is a much more cost-effective resource than any generation”. It can have massive impacts [Raphals, 11 October 2018, page 52; P-00360, pages 10-13]. Raphals submitted that NL Hydro “has chosen to exclude consideration of CDM savings as a resource in its 50-year power plan. I am not aware of any other utility in North America that has so blatantly disregarded CDM as a resource” [P-00363, page 16]. Stratton confirmed he was not a proponent of CDM as part of load forecasting and Moulton confirmed that, other than Stratton including a “technological factor” in his load forecast, CDM was not a factor in Nalcor’s generation plan [Stratton and Moulton, September 26, 2018, pages 35-37].
24. Knight Piesold also concluded that there was no quantification of CDM. Knight Piesold referred to a report from Navigant which recommended that CDM be presented as a viable supply that

could meet a measurable portion of the forecasted demand growth. The result is that “aggressive conservation can play a very significant role in bridging the gap between the two options [P-01530, pages 18-19].

25. Grant Thornton confirmed that “conservation and demand management program adjustments over the long term were not factored into the load forecast.” Marbek Resource Consultants Ltd. issued a report in 2008, which found that industrial customers have the potential to achieve substantial savings in CDM [P-00014, page 33].
26. Using an appropriate level of CDM, the load forecast would have resulted in reducing the CPW for the Isolated Island Option. Even a moderate conservation program would have changed the CPW of the Isolated Island Option by \$447,000,000; an aggressive program would have had an \$875,000,000 effect [P-00014, page 54]. However, failure to account for CDM would have had no effect on the CPW for the Interconnected Option. Choosing to apply a CDM factor to the analysis would have narrowed the gap between the two options. Nalcor’s deliberate decision to ignore CDM is troubling.
27. **Integrated Resource Planning:** Nalcor and the Government should have undertaken integrated resource planning before any decision to proceed with Muskrat Falls. In fact, integrated resource planning should have been used to not only analyze, but also develop the options for consideration for meeting the energy needs of the Province.

28. The Joint Review Panel recommendation 4.3 was for the Government and Nalcor to consider using integrated resource planning, a concept successfully used in other jurisdictions [P-00041, page 69]. This was not done. Dr. Guy Holburn (“Holburn”) is a professor at the Ivey Business School, University of Western Ontario with expertise in the areas of utility regulation, governance and business strategy. Dr. Holburn stated the following in his report, which bears repeating here, with respect to the importance of integrated resource planning:

The initial need for an electricity infrastructure project may be identified by a project proponent or by a system planning agency as part of an integrated resource plan (IRP) that assesses a range of generation and transmission options, as well as demand management and conservation programs, to ensure that supply is sufficient to meet long-term electricity demand in a cost effective, reliable and environmentally sustainable manner. In Ontario and Alberta, for example, independent planning agencies have undertaken detailed periodic needs assessments of future generation and transmission requirements, which form the basis for subsequent public consultation and regulatory evaluation. In Nova Scotia, utilities are required to file integrated resource plans with the Utility and Review Board, which form the basis for hearings, stakeholder discussions and UARB review. IRPs provide a strategic framework against which specific project proposals can be evaluated in how they meet system objectives relative to other alternatives

In NL, concerns have been raised several times over the last decade about the approach to electricity system planning, which has been led by Newfoundland and Labrador Hydro rather than by the PUB. In 2006, Newfoundland Power noted in its submission to the 2007 Energy Plan, *“system planning guidelines that have the benefit of input from all significant stakeholders would be desirable to ensure both fair competition and appropriate system development. To attract the most competitive proposals for system additions, the system plan should be available publicly. The status of the plan and any material change in circumstances should be available through the publication of periodic reports (e.g., annually or biannually), as necessary”*.

...

In the absence of a comprehensive integrated resource planning process that involves relevant stakeholders and that is conducted in a transparent, public manner, there is a greater risk that more efficient approaches to managing electricity supply and demand are missed or overlooked, and that higher cost options will instead be selected [P-00528, pages 14-15].

29. Geoffrey Young (“**Young**”) of NL Hydro expressed the view that one of the reasons the PuB and the parties were constrained from undertaking a full ranging integrated resource plan was because under the Province’s Energy Plan, the Province’s preferred view was to meet the longer-term electrical generation needs through the development of the Lower Churchill Project. Young stated that: “Were time and money unlimited, it would be possible to carry out full planning and engineering processes for two possible contingencies: a future where the island’s long term needs are met by the Lower Churchill Project and an HVDC link, and a future where the Island Interconnected System remains an isolated electrical system ....In Hydro’s view, this would unavoidably involve a considerable amount of engineering and support work” [P-01164].
30. The position as explained by Young shows that it was determined as early as 2008 that an expenditure on integrated resource planning was not warranted because the “Province’s preferred view was to meet the longer-term electrical generation needs through the development of the Lower Churchill Project,” illustrating the Province’s preferred choice had long been the Interconnected Option [P-01164].
31. Gilbert Bennett (“**Bennett**”), Nalcor Vice-President of the Lower Churchill Project, testified and confirmed that the Energy Plan was a mandate document that Nalcor was expected to follow [Bennett, 26 November 2018, pages 4-5]. Bennett’s evidence was that the “go it alone” NL Hydro led option was selected as the preferred option back in 2006, over other options including one which involved Hydro Quebec, Ontario Hydro and SNC Lavalin developing the Lower Churchill (Gull Island and Muskrat Falls) [Bennett, 26 November 2018, pages 6-7]. This option was based on export into known markets with no cost to the ratepayers or the taxpayers of this Province.

32. Paul Humphries (“**Humphries**”) was formerly manager of System Planning and Vice-President of System Operations and Planning at NL Hydro. Humphries provided similar evidence when he said integrated resource planning would need to involve the PUB, and acknowledged this was discussed between NL Hydro and the PUB as far back as 2004. Humphries testified it was discussed throughout 2006-2007, but those discussions “went cold” at the time the Energy Plan came out in 2007 [**Humphries, 13 November 2018, page 12**]. Moulton testified that NL Hydro does not use integrated resource planning because the results are not worth the cost and effort [**26 September 2018, pages 38-39**]. This view is certainly at odds with the expert opinion of Dr. Holburn. In the result, Nalcor failed to employ integrated resource planning to the detriment of ratepayers.
33. **Capital Cost Estimates:** Normand Bechard (“**Bechard**”) of SNC-Lavalin (“**SNC**”) testified that the Muskrat Falls Project capital cost estimate as it existed in December 2011 - \$4.464 billion – should have been doubled to get the total cost, including contingency and risk allowances [**Bechard, 26 March 2019, page 33; Bechard, 27 March 2019, page 5; P-00860**]. If this had been done, the total estimated cost of the Muskrat Falls Project would have been almost \$9 billion.
34. George Jergeas (“**Jergeas**”) is the director of the Project Management program at the University of Calgary. Jergeas confirmed that megaproject costs typically double, and therefore with an estimate of \$6.2 billion, he would have expected from the start that the Muskrat Falls Project would have been a \$9.3 to \$12.4 billion project [**Jergeas, 19 June 2019, page 61**]. Based on this information, which was readily available in 2012, Nalcor and the Government failed to inform the public of the risk that the cost of the Muskrat Fall Project could approach \$12.4 billion. In fact,

Jergeas testified that the public should have been advised the cost was between \$6.2 to \$15 billion [Jergeas, 19 June 2019, page 61]. Nalcor failed to complete a megaproject financial analysis and therefore public disclosure was lacking.

35. **Megaproject Overruns:** Nalcor either failed to discover, or discovered and ignored, the very real risk of megaproject cost and schedule overruns, information that was readily available to Nalcor prior to sanction. As a result, no one at Nalcor planned for this risk, nor did anyone advise the Government or the public. Professor Bent Flyvbjerg (“Flyvbjerg”) is the chair of Major Programme Management at Oxford University’s Said Business School. Flyvbjerg has studied over 300 hydroelectric projects and testified that on average, hydroelectric projects have a 96% cost overrun and nearly half of these projects encountered scheduling delays [P-00004, page 9]. According to Flyvbjerg, the root causes of cost and schedule overruns are optimism bias and political bias [P-00004, pages 14-19]. The preponderance of evidence shows there was a significant degree of both optimism bias and political bias with the Muskrat Falls Project. These errors in judgment resulted in unnecessary financial exposure to ratepayers and taxpayers, which will lead to exorbitant electricity rates in the absence of mitigation.
36. It is very unlikely the Muskrat Falls Project would have proceeded had the risk of doubling the costs and schedule overruns beyond the date of the purported need for more power been considered and communicated to the public. Expertise on this issue was readily available yet Nalcor chose not to seek an expert opinion or conduct the relevant research prior to sanction. For example, a simple internet search would have uncovered Professor Flyvbjerg’s work on



megaproject going back to 2003. Simply put, Nalcor and Government officials failed to conduct basic megaproject research.

37. **P-Factors:** A probability factor, or “P-factor”, is used to determine the probability that a projected cost (or schedule) will be over or under the projection. The higher the P-factor, the less risk there is of cost (or schedule) overruns. For the Interconnected Option, at DG2 and DG3, a P-factor of P50 was used. A higher P-factor in the P70 or P90 range is considered best practice [**P-00014, page 62**].

38. The advice from Westney Consulting Group (“**Westney Consulting**”) was to use a P75, and this was rejected by Nalcor. In a September 20, 2018 memo, Richard Westney (“**Westney**”) confirmed:

...I did acknowledge that it might well be appropriate to fund a public mega-project, such as LCP, at a P factor greater than 50. My discussions with the Westney team also confirmed that, during discussions with Nalcor, our view was that a P factor of at least P75 would be appropriate, as would a funding strategy for strategic risks. Our discussions of schedule risk were similar [**P-00955**].

39. Westney noted that it was important to fund Muskrat Falls at P75 because it is a utility, meaning ratepayers are funding the cost and overruns effect the cost of power [**Westney, 16 November 2018, page 13**]. As a result, it was communicated to Paul Harrington (“**Harrington**”), a member of the Muskrat Falls Project Management Team (the “**PMT**”) by Westney to use “at least P75” [**Westney, 16 November 2018, pages 13-14**].

40. Westney testified about “black swans” [Westney, 16 November 2018, pages 8-9] and testified that Harrington was advised by Keith Dodson (“Dodson”) that Nalcor should be very conservative and careful in its approach to strategic risk and to use a high confidence level, especially given that Nalcor is a Crown corporation [Westney, 16 November 2018, page 13]. Harrington had no experience analyzing risk or selecting P-factors, yet he decided to ignore the advice he was given. In fact, Harrington did not communicate this advice to the Nalcor executive [Harrington, 19 November 2018, pages 31-35]. Bennett testified Harrington should have told him [Bennett, 26 November 2018, pages 54-55]. It certainly appears this important information was never delivered to the Government, and certainly not to the public. It also demonstrates a lack of internal communication within the Nalcor PMT.
41. When the Lower Churchill Project included the Gull Island first scenario as the preferred option, Harrington and Jason Kean (“Kean”), Muskrat Falls Project Services Manager, advised that a capital cost recommendation should include amounts for contingency on a P50 basis for tactical risk, as well as some further amounts to bring both the strategic risk and the tactical risk to a P75 level on a mitigated basis. Kean testified he had consistently been providing capital cost information on the various configurations of the Lower Churchill Project that were being assessed at a P75 level until August of 2010 when he was asked by Investment Evaluation at Nalcor to begin to provide cash flows on a P50 level [Kean, 7 November 2018, pages 52-54]. Harrington agreed this was consistent with his memory [Harrington, 19 November 2018, page 28]. Harrington acknowledged using a P50 was aggressive and was a challenge, but nonetheless it was established by the Nalcor executive [Harrington, 19 November 2018, pages 28-31].

42. Derrick Sturge ("**Sturge**"), Nalcor CFO, testified that there was a conscious change from P75 to P50 which resulted in taking out contingency, thereby reducing the DG3 estimate by 3.82 percent [**Sturge, 31 October 2018, pages 66-67**]. Both Kean and Harrington testified it would not have been their decision to change from a P75 to a P50. Bennett had no recollection of being approached about this change or how or why the change was made. His understanding is it was a decision of the PMT and Investment Evaluation but acknowledged he should have been made aware as Vice-President of the Lower Churchill Project [**Bennett, 26 November 2018, pages 53-55**].
43. If Nalcor had used a P75 at DG3 rather than a P50, the cost estimate for the Muskrat Falls Project would have been not \$6.2 billion, but would have been \$7.5 billion in today's dollars (\$7.1 billion in 2012) [**Kean, 7 November 2018, page 104**] [**P-00014, page 65, lines 32-37**]. Note as well that the \$6.2 billion DG3 estimate included a built in "escalation allowance", which includes the effects of inflation [**P-00014, page 53 and page 62, lines 39-40**].
44. Bechard testified that he used a P85 factor for the 768-megawatt Hydro-Quebec Eastmain project ("**Eastmain**") [**Bechard, 26 March 2019, page 36**]. Dodson suggested P90 should have been used for a public project like Muskrat Falls. Because the Project must be paid for with public funds, higher scrutiny is required and therefore there should be more room in the budget [**Dodson, 25 February 2019, page 31**]. John Mallam ("**Mallam**") was a member of the Independent Project Review team for Muskrat Falls, both at DG2 and DG3, and he testified that he would also have used a higher P-factor than P50:

So, as I said a moment ago, you'd love to have a P90 estimate, carry a 10 per cent contingency and base it on that, but, practically, you might use only a P70 and you can, in fact, even use a P50, but you can do that only if you have an appropriate contingency. And as I said again a moment ago, at a P50 level, I would've expected to see a contingency of 25 to 50 per cent, perhaps even higher [Mallam, 17 October 2018, page 15].

45. The public had a right to be informed of realistic cost estimates and worst-case scenario cost estimates. An aggressive P-factor resulted in artificially decreasing the estimated cost of the Interconnected Option, in contravention of best utility practice. Because a low P-factor was used to establish cost estimates, the public were not properly advised of the true potential cost of the Interconnected Option. Pelino Colaiacovo, an investment banker working primarily in the electricity sector, testified that P factors generally only apply to megaprojects and therefore would not have been necessary for the Isolated Island Option. As a result, the "only question is: Which capital cost do you use in the Interconnected Option? And if you use a higher capital cost in the Interconnected Option, then it just becomes more expensive" [Colaiacovo, July 18, pages 51-52].
46. **Schedule**: The schedule was P1 – meaning it had a 1% chance of being completed on time - and was referred to multiple times at the Inquiry as "aggressive." Harrington knew it was unlikely to be met and was just a "target" used to "motivate the project team" [P-00506]. Harrington confirmed in a letter to Stan Marshall in 2016 that the initial schedule was unlikely to be achieved [P-01962]. Harrington accepted that, as project director, he was responsible to bring the project in on time and on budget [Harrington, 6 June 2019, page 52] – yet his letter is clear that he knew this was not possible.

47. Westney advised that a P1 schedule was “completely unrealistic” and “P1 should be considered the same as a P0 and a totally unrealistic schedule. I think anybody in the industry would know that.” While the term “aggressive schedule” was consistently used by the project management team and the executive, Westney testified that even a P30 schedule would be aggressive [Westney, 16 November 2018, page 17]. Mallam testified that, even at DG2, the proposed schedule was virtually impossible to achieve [Mallam, 17 October 2018, page 4].
48. Harrington testified that Nalcor executive would have been aware of the P1 schedule at DG2 [Harrington, 19 November 2018, page 46]. Harrington did not know if the Nalcor Board of Directors or Derek Sturge were aware of this, but said he would not have communicated the P1 schedule to members of the Government as that was not his role; this was the responsibility of Edmund Martin (“Martin”), CEO of Nalcor at the time of sanction and financial close [Harrington, 19 November 2018, pages 46-48]. Bennett testified he was not aware Kean had gone back to Westney in September 2012, prior to DG3, with new information in the hopes it would improve the schedule reliability from a P1 up to a P20 or P30, but was told it only changed it to a P3 [Bennett, 26 November 2018, pages 72-74].
49. Sanction proceeded based on a first power date of July 2017 [Kean, 7 November 2018, page 78]. However, the DG3 Qualitative Risk Assessment (“QRA”) carried out in the leadup to sanction revealed that there was a very low likelihood of achieving first power by the target date of July 2017. Nalcor executive (Martin and Bennett) acknowledged that the schedule was very aggressive but wanted to drive the contractors to provide their best efforts to meet the target

dates. A couple of months after sanction, in February 2013, the first power date was moved to late 2017 [**Kean, 7 November 2018, page 80**].

50. Bennett acknowledged the PMT made a recommendation to the Nalcor executive that there be a schedule reserve allowance at DG3 [**P-00894, page 18**]. Bennett testified it was the decision of Martin not to accept this recommendation; Bennet could not recall being consulted. Bennett disagreed with Martin's decision not to include a reserve allowance for schedule. Bennett acknowledged this is information that should have been given to the Board of Directors for consideration as to whether to sanction and that it was Martin's responsibility to do so [**Bennett, 26 November 2018, pages 74-78**].

51. In short, the public was misled as to the expected date of first power.

52. **Oil Forecasts:** For the Isolated Island Option, fuel costs represented a significant portion of the total cost (\$6.7 billion of the \$10.7 billion total cost was allocated for fuel costs) [**P-00058, page 11**]. PIRA Energy Group ("PIRA") was used to provide an assumption regarding the price of oil over the lifetime of the Interconnected Option. However, it was not the practice of any company, including PIRA, to attempt to predict the actual price of oil beyond a twenty-year period. In fact, PIRA did not actually provide a forecast for the price of oil beyond the twenty-year period. MHI stated that no one would do this [**30 October 2018, page 77**]. Rather, PIRA provided forecast which was valid to 2027. For subsequent years, the price of oil was simply escalated by 2% each year, compounded to 2067 [**P-00014, page 48, MHI Panel, 29 October 2018, page 36**]. It was not reasonable to assume the cost of oil would continue to increase for fifty-six years.

53. It was also not reasonable or objective to use such a long-term forecast, which was unique to Nalcor and the Muskrat Falls Project. The reason this forecast was used was because “the asset life of a hydro power dam is much greater than the thermal power plant, and that’s what was driving the long timeframe” [MHI Panel, 30 October 2018, page 78]. However, as outlined below, using the Muskrat Falls Project as the benchmark to determine the lowest possible cost was a subjective choice by Nalcor. This decision created extreme uncertainty in the costing of the Isolated Island Option. As concluded by MHI:

There remains significant uncertainty in fuel price forecasts, which are magnified over the 50-plus years of the study horizon. The Interconnected Island option has much less exposure to variances in fuel prices [P-00058, page 11].

54. The effect of using continually increasing oil prices over fifty years was not only a stretch but it significantly increased the CPW for the Isolated Island Option. This can be demonstrated as follows: in the event there were no increases in the price of oil after 2030, the effect would be \$857,851,000 in the CPW analysis in favour of the Isolated Island Option [P-00014, page 49]; and with a low price of oil forecast, the gap in the CPW closes to \$584,000,000 [P-00014, page 55].

55. This one input – the cost of oil – had a significant impact on the CPW for the Isolated Island Option. It was unreasonable and misleading to portray the cost of the Isolated Island Option as higher than the Muskrat Falls Project when the cost of the Isolated Island Option was so significantly impacted by the price of oil. This input has no basis in fact; historically, oil prices fluctuate as opposed to constantly increasing.

56. **Export Sales:** While not included in the CPW analysis, the value of export sales (being 60% of the total available output from Muskrat Falls), was constantly put forward to the public as a benefit of the Muskrat Falls Project. However, the idea of selling excess power essentially proceeded on speculation. Former Cabinet Minister Jerome Kennedy ("**Kennedy**") was told by world experts there was no possibility of obtaining long-term power contracts for the sale of this excess energy. Yet, when Kennedy met with world experts Wood McKenzie, he was informed there was no market for large blocks of power. Kennedy was also told that Quebec was trying to sell large blocks of power but was unable. Kennedy was satisfied that the power could be sold on the spot market thereby choosing the advice of Nalcor over Wood McKenzie. Furthermore, Kennedy (and other politicians) sold the Project to the public with information like "the interconnection is crucial and the construction of the Maritime Link means we finally have a transmission route to sell power for profit that is surplus to our domestic needs." Kennedy did not inform the public the power would be sold on the spot market, which has fluctuating prices [**Kennedy, 5 December 2018, pages 15-17**].

57. Gerry Shortall, a member of the Nalcor Board of Directors, had also been convinced that selling on the spot market was more valuable than securing long-term contracts [**Shortall, 16 October 2018, page 19**].

58. There were never firm contracts in place for the sale of any additional export power. Nalcor instead will have to rely on selling power on the spot market (due to multiple failed efforts to secure contracts for export sales). The Project was sanctioned with no guarantee that excess



energy could be sold; there was no firm valuation on what revenue would be forthcoming. Public money was spent, in part, on the vagaries of the spot market.

59. Gull Island was deemed uneconomical due to the fact there was no long-term domestic industrial customers and no access to long-term North American customers through Quebec. Yet, Nalcor was satisfied to proceed with Muskrat Falls despite the fact it would generate significantly more power than necessary for domestic use. The long-term contract that was absent in the case of Gull Island was also absent in the case of Muskrat Falls. The only difference was the island ratepayers would conveniently become the long-term contract/anchor for the Muskrat Falls Project. The actual cost to the ratepayer, however, was not considered important:

**MR. STURGE:** Yeah, no, I think the difference there is that most of those discussions were taking place in the context of Gull Island. So in the context of Gull, we needed the large anchor clients and just going to market. The only reason we can go to market now is because the predominant user of this project is the Island – the domestic customer. And the extra power is excess to their needs, so on that basis we can take it to market. If we were using this to finance the project or justify the project – we just couldn't take the project to market. You would have to have long-term contracts.

**MR. HOGAN:** That was going to be my next question. Would a financial institution finance a project with spot market?

**MR. STURGE:** No

[Sturge, 31 October 2018, page 47].

60. **Closure of Holyrood:** The CPW for the Isolated Island Option included additional environmental upgrades for Holyrood that are not required by existing legislation. Greene testified that this resulted in exaggerated costs at Holyrood for purposes of calculating the Isolated Island Option CPW. One of the principles for regulation in the utility sector is for the regulator to determine

what is required by legislation and whether what is proposed is a reasonably prudent cost to be passed on to the ratepayers. The idea of something being required for social policy reasons, even if not required by legislation, may be an appropriate policy decision for a government, but it is not appropriate to require ratepayers to pay for it in a regulatory framework [Greene, 24 October 2018, page 81].

61. The public was told that once the Interconnected Option was constructed and operating, Holyrood would be decommissioned. Moulton testified:

Next, where the Muskrat Falls and the – well the – especially the Labrador-Island Link, the LIL, coming on. And it actually came on mid-year 2017. The CP, again, that just – Holyrood was gonna be – was planned to be shut down a year or two. Once we established that the Muskrat Falls and the Maritime Link operated reliably, the plan was to dismantle Holyrood. But we were gonna keep the – one of the units as a synchronous condenser; it's just a device that helps support to getting electricity from Muskrat Falls to the Island and some other things [Moulton, 25 September 2018, page 49].

62. Moulton testified the plan was Holyrood would likely remain “warm” for a year or two after Muskrat Falls commissioning once it was determined that Muskrat Falls and the Labrador-Island Link proved to be reliable [Moulton, 26 September 2018, pages 72-73]. Humphries testified that at least by 2020 “timeframe”, the plant in Holyrood would be retired, but portions of unit 3 would be kept for the synchronous condensing capability it has [Humphries, 13 November 2018, page 62]. It is 2019 and Holyrood has not been retired and there is no active plan that was put into evidence to show there is a plan to retire it. PUB authorization is required to retire Holyrood and no application has been made to the PUB in this regard [Bennett, 26 June 2019, page 27]. Nalcor has no jurisdiction over any decision to close Holyrood.

63. Nalcor knew with certainty that Muskrat Falls would not be operational in the timeframe communicated to the public. Therefore, the costs of continuing to operate Holyrood beyond the target dates of July 2017 (and then December 2017) should have been included in the Interconnected Option CPW. It is, however, unclear to what degree - if any - inputs like additional fuel purchases beyond the originally anticipated closure of Holyrood were factored into the Interconnected Option CPW. It does not appear any formal analysis or calculations of such information was performed by Nalcor in the leadup to DG3 [Warren, 4 June 2019, 60].
64. **Reliability:** Prior to authorizing a retirement of the Holyrood facility, the PUB would want to be satisfied there is a reliable backup power source. While vague references have been made to the Maritime Link as a backup source, there is no reliable back-up source for firm power should the Labrador-Island Link fail, and it appears Holyrood will still be needed for an undetermined period even upon completion of the Muskrat Falls Project.
65. Nalcor's conclusion was that interconnection to the North American grid would be more reliable than the Isolated Island Option [P-00014, pages 24-25]. The justification that the requirement for interconnection to the North American grid seems to implicitly suggest a non-interconnected option cannot be reliable. However, an isolated option has historically proven to be reliable [Alteen, 17 December 2018, pages 26-28]. Furthermore, there is no guaranteed firm power coming to the island from the North American grid. Bennett testified this to be the case and stated that if increased robustness is desired for system reliability, the more ratepayers will have to pay for it [Bennett, 26 June 2019, page 109]. Regarding the Maritime Link as a potential source of backup power, Humphries testified that only 325 megawatts is available to be brought onto

the island via the Maritime Link, but he acknowledged this does not mean there will be 325 megawatts available for purchase [Humphries, 13 November 2018, pages 60-62]. Alteen testified the Maritime Link is technically able to provide 300 megawatts of emergency support to the island, but there are limitations. One limitation is whether power will be available for purchase and what the terms of such a power purchase agreement would be; a second limitation is ongoing problems on the Avalon Peninsula associated with the transmission system [Alteen, 17 December 2018, pages 30-32].

66. Muskrat Falls does not guarantee reliability. In fact, Newfoundland Power has concerns about reliability given that the main source of power for the majority of its customers will be located in Labrador, hundreds of kilometers from these customers, and will have to travel across 1100 kilometres of transmission lines, significant portions of which run through remote areas. Studies show the possibility of rotating power outages on the Island in the event the Labrador-Island Link fails and Holyrood is closed [Alteen, 17 December 2018, page 7].
67. Nalcor's DG3 cost estimates for the LIL were based on 1:50 year reliability even though MHI's work at DG2 for the PUB and at DG3 for the Province recommended higher reliability at 1:150 or 1:500 depending on the area of the transmission line. Despite this, and despite an intention to increase reliability, Nalcor did not update the CPW for DG3, which was based on the (less reliable and less costly) 1:50 reliability standard. [Kean, 6 May 2019, pages 61-63]. Exhibit P-03188 (Nalcor's reply to questions from Grant Thornton) indicates that the final design of the LIL meets or exceeds the 1:150-year reliability return periods in all of its weather zones, and that in many sections it does meet or exceed a 500-year reliability return period. Nalcor's DG3 cost estimates

for the LIL were also based on there not being year-round road access to the transmission towers and that there would instead be helicopter access. Ultimately, however, Nalcor ended up building a lot more access roads than were included in the DG3 cost estimate [Kean, 6 May 2019, pages 65-67].

68. **Geotechnical Data**: Nalcor did not have complete geotechnical ground data for the areas where transmission lines were to be constructed. Bechard stated there is no excuse for proceeding with lack of data [Bechard, 27 March 2019, pages 5-6]. Bechard noted that not having this data presented a “huge element of risk” because it is a “huge known-unknown factor because you know that you don’t have any site investigation and you know that there will be costs related to it” [Bechard, 26 March 2019, pages 34-35]. Bechard had never seen a project before where the geotechnical data was not available [Bechard, 26 March 2019, page 36]. John MacIsaac (“MacIsaac”). Former Nalcor Vice-President in charge of power supply, stated that “trending on the data was a difference of roughly 50 per cent” which would create a problem because having the “right geotechnical data for a sufficient period of time, out in advance, allows for timely decision-making and selection of the right type of foundation” [MacIsaac, 11 June 2019, page 103].

69. James Gilliland (“Gilliland”) of Williams Engineering testified that geotechnical conditions are unique and site specific and therefore represent a significant challenge to any project. This warrants as much investigation as possible in order to mitigate risks that can be very significant. If it is not practical to complete investigatory work, additional is required from a financial and a

schedule perspective. Gilliland testified that in northern Canada, including Labrador, soil conditions are highly variable and within a matter of feet soil conditions or the geotechnical conditions can change from rock, granite, bedrock to bog where there is no discernible bedrock at all. This can all have a massive impact on gaining access to the site as well as determining transmission tower locations and foundation types [21 March 2019, pages 39-40].

70. Kelly Williams ("**Williams**") and BJ Ducey ("**Ducey**") from Valard Construction ("**Valard**") testified about their experience in carrying out the contract to erect the transmission towers. Williams testified he had never seen a project of this size done with limited geotechnical work and that Valard's teams were not finding the actual conditions matched what the engineers had anticipated. Nalcor relied on desktop studies based on things like aerial photos with practically no "ground truthing," such as digging test holes at tower sites [Williams, 3 April 2019, pages 16-17]. According to Ducey, when the number of complex tower foundations started to exceed estimates, relations between Nalcor and Valard soured with Nalcor accusing Valard of attempting to drive up cost or create a delay claim. Ducey testified that in reality there were true technical issues that needed to be resolved. Williams testified that if Valard crews determined a more complex foundation was required, it had to be approved by a member of Nalcor's project team in St. John's, and this often caused delays of days, weeks or months on occasion. Ducey testified there were also times when multiple installation attempts resulted if Valard was directed to install what it felt was an inappropriate foundation. Ducey said relations "had become very fractured and (it) was very hard to have productive discussions with each other" [Ducey, 3 April 2019, pages 36-37].

71. Proceeding without more robust and reliable geotechnical data meant this portion of the capital cost estimates were not accurate and caused subsequent schedule delays and cost increases. In a letter from Jamie Chippett, Department of Municipal Affairs and Environment, if Nalcor had wanted to conduct more testing, including geotechnical work, before the release of the Labrador-Island Link from environmental assessment, it could have made the request and the Department would considered it [P-03276]. Nalcor did not make such a request.
72. The fact that the Project was sanctioned with incomplete geotechnical data is further evidence of the risk Nalcor was willing to impose on the ratepayers in prematurely seeking sanction of the Project. Government officials also failed the public in this regard.
73. **Labour Productivity**: Prior to sanction, Nalcor was warned by Dodson that the proposed labour productivity was unlikely to be achieved. Upon reviewing the achieved rates in 2016, Westney Consulting found that the rates actually achieved “were basically the rates that we were proposing that we were seeing trends around the world. Actually, they’re very consistent with a study that was done in Alberta in 2009. So it gets complex in that, no, the rates that were used in the estimate are half the rates of the actual project, but the actual projects against the world are very good” [Dodson, 25 February 2019, page 8].
74. Dodson testified that the labour productivity estimates were low (thereby meaning the cost estimates were low). According to Dodson, “SNC-Lavalin and Astaldi did not recognize the change of world productivity.” While the ultimate performance was good compared to world standards, the original estimates were too low [Dodson, 25 February 2019, page 33].

***Section 1.2: Whether Nalcor unreasonably dismissed options other than the Muskrat Falls Project and the Isolated Island Option***

75. As noted above, assumptions and forecasts were made that favoured the Interconnected Option. The Government and Nalcor preferred the Interconnected Option and as such, did not undertake full analyses into other options.
76. **Importing Power from Quebec or New England:** Energy imports from Hydro-Quebec or New England were ruled out by both Government and Nalcor at DG2. Grant Thornton recognized Nalcor completed an analysis of electricity imports as a supply option but noted that Nalcor made assumptions regarding the purchase price of power without engaging in formal discussions with Hydro-Quebec [P-00014, pages 27-28]. Bennett's testimony revealed that no sincere exploration of this option took place, when he stated Hydro-Quebec saw "us" (presumably NL Hydro/Nalcor) as a competitor and did not want us in the market, but Bennett confirmed that they did not approach Hydro-Quebec about possibly purchasing power [Bennett, 26 November 2018, pages 38-39].
77. The CPW calculations done at DG2 for the option of importing power from Hydro-Quebec or from New England Independent System Operator showed that the CPW for both options were less than the proposed Isolated Island Option, yet no further analysis of these options was done after DG2 [P-00014, page 24].



78. **Natural Gas:** The option of natural gas was not fully examined, as outlined in detail by the evidence provided by Dr. Stephen Bruneau. Dr. Bruneau testified that not only was the natural gas option not explored, but that the failure to do so was inconsistent with the Energy Plan [Bruneau, 5 November 2018, page 23]. Dr. Bruneau estimated that the capital cost estimate to transport gas and generate electricity would be \$2 billion, much cheaper than the Interconnected Option [Bruneau, 5 October 2018, page 10].
79. Only after the release of Dr. Bruneau's report did the Government engage Ziff Energy Group ("Ziff") in late 2012. Ziff issued their opinion that natural gas was not a viable option [P-00014, page 16]. Ziff's conclusions were never subject to any independent analysis or scrutiny yet were trumpeted extensively by the Project proponents as further support for the Interconnected Option.
80. After the Ziff report, the Government engaged Wood Mackenzie to do a review of Ziff's findings; however, the Wood Mackenzie report was revised so as to remove the reference to its conclusions regarding liquified natural gas. The removed section states that "Wood Mackenzie believes that a gas-to-oil price arrangement in the range of 70% would be more reflective of these evolving market conditions", whereas Ziff used 80%. Using 70% would have resulted in a CPW value that was lower than the Isolated Island Option [P-1312, pages 8-9; P-1290, page 9; Kennedy, 5 December 2018, pages 20-21]. While Kennedy denied removing this section from the Wood Mackenzie report, Charles Bown ("Bown") testified that to the best of his recollection this direction would have come from Kennedy [Bown, 5 December 2018, page 75]. Bown was a civil servant and held various senior roles in the Department of Natural Resources during DG2,

DG3 and financial close. Bennett acknowledged that applying the information from the Wood McKenzie study showed that liquified natural gas had a CPW of \$10.1 - \$10.2 billion dollars, which is hundreds of millions lower than the Isolated Island Option CPW, yet it was not ever analyzed at the DG2 stage [Bennett, 29 November 2018, pages 3-4].

81. Although there is reference to “phase 1” and phase 2” screening of alternatives in Nalcor’s submission [P-00077] and presentation to the PUB in February 2012 [P-01452], Bennett confirmed Nalcor had no formal phase 1/phase 2 screening process and that it was simply terminology Nalcor used before the PUB to show options that were screened out by Nalcor as not viable early in the process. The option of natural gas was ruled at this “phase 1” screening level, which happened prior to DG2 and was thus not subject to DG2-level analysis. Bennett acknowledged that preliminary information and studies had found that liquified natural gas for domestic use could be cheaper than the Isolated Island Option [Bennett, 26 November 2018, pages 29-36].

82. 2041/Deferred Churchill Falls: Nalcor confirmed in its submission to the PUB that this option never advanced past its “phase 1” screening [P-00077 and P-01452]. The Government released a series of reports in late November 2012 for the purpose of supporting the Interconnected Option, including one entitled “Upper Churchill: Can we wait until 2041?” [P-00061]. The report concluded waiting was not a viable alternative [P-00014, page 29]. The Joint Review Panel report recommendation 4.2 [P-00041, page 68], however, called for an independent analysis of the deferred 2041 option of utilizing an on-island option until 2041 and then purchasing market priced power from CFL Co.

83. Early sensitivity analysis showed the gap between the deferred 2041 option and the Interconnected Option was \$1.3 billion. This was a significantly smaller gap than the gap shown by the early sensitivity analysis as between the Isolated Island Option and the Interconnected Option at that time, yet the deferred 2041 was not analyzed at the DG2 stage [P-00014, page 54] [Bennett, 26 November 2018, page 41]. After reviewing Nalcor's and Government's decision to dismiss the deferred 2041 option, Grant Thornton concluded:

Nalcor's decision to eliminate the deferred 2041 option was supported in part by a rationale which was inconsistent with a finding of the NSUARB in relation to the ML portion of the Muskrat Falls Project [P-00014, page 29].

The finding of the NSUARB referred to by Grant Thornton was that "...the evidence clearly shows that there should be no shortage of Market-priced Energy when the Churchill Falls arrangement with Hydro Quebec comes to a conclusion in 2041" [P-00014, page 29].

84. Neither the Government nor Nalcor genuinely studied the deferred 2041 option. Stan Marshall testified that an on-island option involving additional capacity at Bay d'Espoir and Cat Arm and adding wind to get us to 2041 was an option he would have looked at closely as a viable option [Stan Marshall, 2 July 2019, page 21; Stan Marshall 3 July 2019, pages 19-22]. During questioning about options considered for getting to 2041 and then purchasing Churchill Falls power after that, Moulton confirmed that the possibilities of doing expansions at Cat Arm and Bay d'Espoir were never put through the Strategist system for analysis for this purpose [Moulton, 26 September 2018, page 49].

85. The failure to fully consider and analyze the deferred 2041 option fell far short of the Joint Review Panel's recommendation 4.2 and is evidence of a failure to robustly search for the lowest possible cost of power consistent with reliable service.

86. **Isolated Island Option**: The Isolated Island Option put forward as the comparator to the Interconnected Option was lacking in analysis. For example, there are 196 potential hydroelectric sites on the island of Newfoundland, however, only three of these were examined for the Isolated Island Option (Round Pond, Island Pond and Portland Creek). Nalcor chose not to update studies on these hydroelectric sites but instead simply escalated the costs [P-01530, pages 22 and 26].

Moulton testified:

**MS. O'BRIEN:** Okay.

And so, Mr. Moulton, I'll put this question to you, who provided you – let's look at DG3, okay, the Decision Gate 3 CPW analysis you did. Who provided the capital cost requirements that you would have needed to look at the Isolated Island Option?

**MR. MOULTON:** They were refreshed by the LCP people, but they were taken from a number of various things, studies that had been done in previous years, and they took the studies, went out to industry and consultants, had them refreshed, brought up to date and then supplied us with the numbers. And of course, these numbers – and the MHI looked at all these numbers, and they were happy that they were reasonable, and we were happy ourselves that they were reasonable [Moulton, 25 September 2018, page 60].

87. Detailed, independent studies should have been undertaken in relation to these potential hydroelectric sites. Without an updated analysis, it cannot be said the Isolated Island Option was accurate or reliable. This is further evidence that Nalcor had a preference to proceed with the Interconnected Option.

***Section 1.3: Whether Nalcor's determination that the Muskrat Falls Project was the least-cost option for the supply of power to Newfoundland and Labrador Island interconnected system over the period 2011-2067 was reasonable with the knowledge available at that time***

88. The first point to make is an important one – the approach taken by Nalcor to determine what was the “least-cost option” ignores the requirements of the *Electrical Power Control Act*, SNL 1994, c. E-5.1 (the “EPCA”). Section 3(b)(iii) of the EPCA states clearly that it is a policy of the Province that all sources and facilities for the production, transmission and distribution of power in the province should be managed and operated in a manner that would result in power being delivered to consumers in the province at the ***lowest possible cost consistent with reliable service***. The inherent limitation of considering only two defined options attracted the attention of Alteen:

That sort of framework of the question – I called it an either/or proposition in my interview – that type of proposition was a little bit unique in regulatory terms because the power policy in the province speaks to power being delivered on a least – lowest possible cost consistent with reliable service. This sort of stipulated that – these two situations which were to be compared. So that was the first thing I would have noticed. In the framework of the question, I think, in the terms of reference, the least-cost might be, for example, Muskrat Falls or the Isolated Option that’s described in the reference, but neither of those is necessarily going to be the lowest cost consistent with reliable service. So that, you know – those aren’t the only two options that exist in the planning world that might be the lowest cost consistent with reliable service. So there is a difference from that perspective. This came fully assembled as to 50-year options [Alteen, 17 December 2018, page 4].

89. The use of the period 2011-2067 to determine “least-cost option” or “lowest possible cost” of power was both subjective and random except that it was tied to the purported life of a hydroelectric dam. Otherwise, it lacked objectivity and set up a false comparison. Nalcor further created a suspect choice by framing the decision as the lowest ***long-term*** possible cost – which is not outlined in the EPCA as a defined term.

90. A further known problem has come to fruition. Nalcor's choice of the Interconnected Option removed all flexibility in the electrical system into the foreseeable future. Standard utility practice is to build as needed; the Interconnected Option was building well in excess of need. As stated by Dunderdale, "we couldn't build half of Muskrat Falls" [Dunderdale, 20 December 2018, page 14], implicitly meaning that we only needed about half of the power. Ratepayers are now forced to pay for the cost of constructing a dam that will provide 824 megawatts of power, however, ratepayers only needed perhaps forty percent of this power – if that (the PUB is currently assessing this issue). As a result, the ratepayer is paying for a significant block of power that the ratepayer does not need. In the event circumstances change (i.e. demand decreases or oil prices decrease or new technology emerges), there is zero flexibility in the system resulting in the inability to provide power at the lowest possible cost. Martin conceded that flexibility was indeed lost with the decision to proceed with the Interconnected Option [Martin, 13 December 2018, page 32].
91. Alteen confirmed that when planning resource additions to an electrical system, building a large facility like Muskrat Falls means locking into decisions because all the power created must be paid for regardless of whether it is used. The alternative approach was to maintain flexibility by addressing load on an incremental basis over shorter timeframes [Alteen, 17 December 2018, page 29]. Stan Marshall's evidence was consistent with Alteen's in this regard [Stan Marshall, 2 July 2019, pages 19, 30 and 95; Stan Marshall 3 July 2019, pages 22 and 57]. Alteen also testified that incremental planning and flexibility allows a utility to take better advantage of CDM initiatives; the use of CDM has no impact on the value of the CPW for the Interconnected Option.

92. An example of why flexibility is needed is also outlined in a Natural Resources Canada report, which shows that even with one change – demand growth remaining flat – the CPW of the Isolated Island option becomes \$800 million less than the Interconnected Island alternative [P-00054, page 25]. And as noted by Grant Thornton, the CPW for the Isolated Island Option is more sensitive to changes in load forecast due in part to the impact of fuel costs. Therefore, a decrease in load forecast would have a much greater impact on the CPW (i.e. a reduction in CPW) for the Isolated Island Option compared to the CPW for the Interconnected Island Option [P-00014, page 8]. Given this, it is clear that flexibility is a vital analytic input and the flexibility inherent in the Isolated Island Option should have been considered and given significant weight when comparing it to the Interconnected Option.

93. **Political Bias:** Professor Bent Flyvbjerg provided evidence that political bias and optimism bias lead to cost and schedule underestimation which results in cost and schedule overruns [P-00004, pages 15-19]. There was a preference in the decision to proceed with the Muskrat Falls Project. It is clear that one of the reasons to build the project was to “get around Quebec.” Former Premier Danny Williams’ (“**Williams**”) testimony was that “we shouldn’t be subservient to the whims of Quebec” and that he “did like the idea of getting us independent of Quebec” which resulted in the Maritime route becoming his “preferred option” [Williams, 1 October 2019, pages 19 and 22].

94. However, Muskrat Falls was sold to the people of the Province as necessary to meet the domestic need for power. Nevertheless, Williams and other politicians spoke of preferring the

Interconnected Option based on anti-Quebec animus. Anti-Quebec rhetoric was used to promote the Muskrat Falls Project, ignoring the primary legislative mandate of providing power at the lowest possible cost consistent with reliable service.

95. There was a rush to sanction a project on the Lower Churchill River, and a quick decision was made that this project would be the Interconnected Option. The Lower Churchill Project was never intended to be a domestic project. It included Gull Island which is how it was presented in the Energy Plan and how it was presented to the Joint Review Panel. Furthermore, the original expression of interest was put forward on the basis that Gull Island was included.
96. However, the Lower Churchill Project, including Gull Island, did not make sense without export sales or a large industrial customer base in Labrador such as an aluminum smelter. The most likely route for Gull Island power was through Quebec, but when the decision of the Quebec regulator – the Regie de l’énergie (the “Regie”) – was released in May 2012 denying transmission access, Gull Island was no longer an option (the “**May 2010 Regie Decision**”). Suddenly, the focus turned to Muskrat Falls as a stand-alone project, which was then conveniently portrayed as necessary to meet domestic needs.
97. On 19 May 2010, Harrington noted that there was a “drive behind the Muskrat-stand alone case” to “get the cap costs down as low as possible” [P-04040]. This reference to a “drive behind the Muskrat-stand-alone case” came just nine days after the May 2010 Regie Decision. It seems when the plan to develop Gull Island along with Muskrat Falls was not feasible, a quick switch



was made to Muskrat Falls alone. The plan to do the Muskrat Falls Project came first, and the justification was created later.

98. Furthermore, while the 2007 Energy Plan discussed developing the Lower Churchill, it did so on the basis that it would be part of an “energy warehouse.” However, Muskrat Falls was sold to the public as a domestic-needs project. These two things are not the same. Development of natural resources for economic reasons (i.e. to create jobs and drive the economy), while valid objectives, are policy decisions that should be analyzed separately from the type of analysis required to determine if the development of a natural resource is necessary to meet the requirement to provide power to ratepayers at the lowest possible cost consistent with reliable service. Government policy and legislative obligation to ratepayers were conflated.
99. Nalcor and the Government consistently dismissed anti-Muskrat Falls opinions, including those expressed in the Joint Review Panel. Recommendations from the Joint Review Panel were generally ignored or not followed. Roberta Benefiels testified that not only were recommendations ignored, but the decision to proceed with Muskrat Falls Project was a foregone conclusion [**Benefiels, 11 October 2018, page 36**].
100. Furthermore, criticism of the Muskrat Falls Project did not auger well with the Project proponents. Dissent and opposition were discouraged by politicians. During the Inquiry, Williams referred to opposition by critics as “reckless, irresponsible and shameless” [**Williams, 1 October 2018, page 14**]. The Project proponents attempted to brand those who did not endorse the Project as naysayers, a derogatory term.

101. Nalcor inappropriately participated in the public politics of the Muskrat Falls debate. For example, in a Nalcor slide presentation dated August 3, 2012, pre-sanction, dealing with a communications strategy for the Muskrat Falls Project, various slides spoke to circumventing Quebec, creating a “hit squad” to deal with opposition to the Project, and the “lack of credibility” of the opposition political party [P-00926, pages 26, 31, 34, 35]. Another example includes a plan to “leverage the Quebec versus NL debate to rally support for this venture” [P-00130, page 159],
102. It is also worth noting that a fulsome debate in the House of Assembly did not materialize. Rather, it was limited to a two-hour private members motion [P-1523, pages 26-27; Dunderdale, 20 December 2018, pages 26-27].

***Section 2: Why there are significant differences between the estimated costs of the Muskrat Falls Project at the time of sanction and the costs by Nalcor during project execution, to the time of this inquiry together with reliable estimates of the costs to the conclusion of the project including whether***

***Section 2.1: Whether Nalcor’s conduct in retaining and subsequently dealing with contractors and suppliers of every kind was in accordance with best practice, and, if not, whether Nalcor’s supervisory oversight and conduct contributed to project cost increases and project delays***

103. **Disputes with Contractors:** Multiple witnesses, including significant contractors, gave evidence of difficulties in dealing with Nalcor’s PMT. Complaints included: decisions being made from St. John’s rather than by people on the project site; decisions being made from St. John’s often taking too long and causing undue delay; micromanaging from St. John’s; insufficient authority placed with people on site; lack of clarity with decision making authority; deliberate removal as well as unintended turnover of personnel as a result of Nalcor actions; disrespectful communications by

Nalcor personnel; the tone and manner of communication certain PMT members took with contractors; aggressive, intimidating, demeaning and bullying behaviour by PMT members; and arrogance on the part of the PMT and ignoring advice of contractors. In this regard, the evidence of Mark Turpin, John Mulcahy, Desmond Tranquilla, BJ Ducey and Kelly Williams (Valard), Don Delarosbil and Ed Knox (Astaldi), Norman Bechand (SNC) and Thiery Martin and Laszlo von Lazar (Grid Solutions) is relevant.

104. Contractors also testified about the lack of a harmonious relationship with Nalcor. Nalcor witnesses generally denied the allegations and often blamed the contractors for any problems that existed. This is evidence of disharmony inside the Project, which ultimately resulted in cost and schedule overruns.

***Section 2.2: Whether the terms of the contractual arrangements between Nalcor and the various contractors retained in relation to the Muskrat Falls Project contributed to delays and cost overruns, and whether or not these terms provided sufficient risk transfer from Nalcor to the contractors***

105. **The Astaldi Bid:** The Astaldi bid for the construction of the powerhouse, and intake, spillway and transmission dams was well below two other bids (which were from North American contractors) [P-01677, page 28]. The Astaldi bid was \$250,000,000 above the estimate. The other bid that was comparable to Astaldi, from Salini, was from a contractor also not based in North America. Stan Marshall testified that European contractors have a different approach when it comes to contract bidding:

And the other thing is like, you know, early on I got the feeling that, you know, contractors from southern Europe had a different approach to bidding than what we're used to in North America. And I've asked various engineering firms, as I went along: Was this the case? And it seems to be generally the case that firms from southern Europe approach, you know, bidding different than we would [Stan Marshall, 7 July 2019, page 5].

106. Despite the Astaldi bid being significantly lower than other bids, the labour hours for the bid were significantly higher than one of the bids, IKC. When compared to the bid of Aecon JV, the hours are comparable, but the Aecon JV price is significantly higher than Astaldi. The Astaldi labour hours in its bid were also much higher than the DG3 estimate (6.83 million hours versus the DG3 estimate of 3.66 million hours) [P-01677, pages 28-32]. Astaldi's labour productivity exceeded the DG3 estimate [P-01677, page 33]. Furthermore, the Astaldi bid of \$1.14 billion was much higher the DG3 estimate of \$752 million [P-01677, pages 27-28].

107. This disparity among bidders was described as a "red flag" and an "outlier" [Shaffer, 20 February 2019, page 77], yet it was missed or ignored by Nalcor. It should have been obvious after a cursory review of the Astaldi bid that it was not achievable due to the variances with the other bids and the DG3 estimates [P-01677, pages 28 and 32-33]; it is also relevant that the schedule did not have sufficient float [Bader, 9 May 2019, page 9]. However, accepting one of the higher bids would have closed the CPW gap between the Interconnected Option and the Isolated Island Option prior to financial close [Shaffer, 20 February 2019, page 80].

108. **The Integrated Cover System:** Astaldi's rationale for its low bid was its plan to build an Integrated Cover System (the "ICS") to allow work to be carried out in winter. While evidence was presented

that a cover system could be used, the one proposed by Astaldi was not sufficiently analyzed and investigated. Williams Engineering reported on this:

Without the ICS, Astaldi did not appear to have an alternate plan to deliver the required production rate in order to achieve the overall schedule. Should the ICS not work, Astaldi would need to react quickly to find/buy/transport/erect/operate traditional construction cranes and determine how to meet productivity targets with limited crane placement capacity. Without developing an alternate system quickly, significant delays and increased costs would result [P-01678, page 17].

109. Gilliland testified that the degree to which the ICS was investigated by Nalcor was not clear to him. The ICS may have been an innovative idea, but it was risky, especially given its size. Gilliland's review of the conceptual drawings left him with a lot of questions. There were significant challenges unique to the ICS, including interior columns, conveying systems for cranes, issues related to heating a large structure, foundations being much more complicated because of the need to weave them through the powerhouse, and spanning between very different elevations with a very large hole in the middle of the structure [Gilliland, 21 March 2019, pages 53-54].

110. Evidence from workers was that constructing the ICS was never a possibility:

And the size of that dome and the amount of work that had to be done in the little bit of time we had, to me, it was not doable to begin with. And so I was like: Yes, you want me to do this. I mean, I'll do whatever you want. I mean, you're paying me. But to me it was like, it's – it won't – it's not gonna happen. Doesn't work. There's not enough time in the year, or what was left of the year, to finish up all the formwork and concrete and metal structure to be finished by end of – by December. It's impossible [Cavaliere, 15 March 2019, page 12].

111. Tradespeople also commented on the fact that the ICS was not well-thought out and was always destined for failure:

At the stewards meetings and driving up around looking at the Integrated Cover system, it seemed like a not very well-thought-out idea because, you know, like, you've got to get concrete in there, you got to get steel in there, you got to – I didn't know what they had for a crane system but, you know, you're moving a lot of material around and, you know, and now you got everything covered in, so how are you going to manage that. It seemed like a bad idea [Walsh, 27 May 2019, page 56].

Well, my first reaction when I heard about what they were going to do, I said to myself: Here we go, another Sprung greenhouse. It wasn't feasible. Anybody who knew anything about construction would not even to attempt to try to do what they were planning on doing [McCormick, 27 May 2019, page 56].

112. The ICS failed. This resulted in increases and schedule delays. Scott O'Brien ("O'Brien"), project manager for Muskrat Falls Generation for the Lower Churchill Project, estimated that "the ICS was a major impact to Astaldi's delivery and probably cost between 12 and 18 months on the overall project schedule" [O'Brien, 31 May 2019, page 57].

113. **Limited Notice to Proceed:** A Limited Notice to Proceed ("LNTP") was signed with Astaldi on September 24, 2013 [P-02139], but the gap between the contract award in June 2013 and the LNTP in September 2013 "created serious concern" [Palumbo, 8 May 2019, page 7]. The push to start in the winter of 2013-2014 was further hindered because the design of the ICS had yet to be completed – more evidence of lack of planning and rush to sanction [Palumbo, 8 May 2019, page 10]. In fact, part of the LNTP was to complete the design of the ICS [O'Brien, 31 May 2019, page 57].

114. O'Brien testified that "Astaldi struggled from the outset, immediately after the issuance of the LNTP..." and as a result, "they accomplished little-to-none of the items that were listed in the LNTP" [O'Brien, 30 May 2019, pages 81-82]. In early November 2013, it should have been

obvious Astaldi may not be the right contractor. Martin questioned Harrington about this on 7 November 2013, obviously aware of the Astaldi issues [P-03707]. However, when Martin was asked whether there was serious consideration given to terminating and replacing Astaldi in November 2013 given the poor performance up to that point, Martin replied “not by me.” Martin felt there was a “strong probability” that Astaldi could recover [Martin, 14 June 2019, pages 108-109]. Martin’s faith in Astaldi seems misplaced based on their performance and the concerns expressed by various members of the PMT. Although Martin denied it [Martin, 14 June 2019, page 111], it is likely that the date of financial close being only weeks away played a role in Martin’s decision to stick with Astaldi and not switch out its main contractor since it would probably have delayed financial close.

115. Astaldi did not accomplish the LNTP deliverables, including the ICS design, yet Nalcor proceeded to enter into a contract with Astaldi. Nalcor did this despite knowing Astaldi was a problem contractor and that Astaldi did not possess designs to build the untested ICS. Harrington’s explanation for this was that despite no firm commitment having been made to Astaldi, “you don’t give up on someone, you know, from the get-go” [Harrington, 5 June 2019, page 9]. Given the issues Astaldi was having and the amount of money at stake, Nalcor at this juncture had an option to discontinue its relationship with Astaldi. However, this would have caused Nalcor an embarrassment and some lack of public confidence in the Project when such an important contract it chose was to be displaced. Given the fact Astaldi struggled to complete any of the work required under its LNTP, Nalcor should not have executed a contract with Astaldi.

116. Because of the delay in financial close to November 2013, execution of the contract with Astaldi was also delayed beyond the contract award date of June 2013. Mobilization was supposed to start at this time – the summer of 2013 – which was critical to the success of the contract. Palumbo stated “having the award of the contract and the possibility to start mobilization during the favourable period of the year, as it is June, was an important matter” [Palumbo, 8 May 2019, page 4].

117. Whether or not the ICS was ever feasible, the delay in mobilization beyond the summer of 2013 certainly led to the failure of the ICS. When financial close was completed in November 2013, rather than update the schedule to account for the fact that it would now be impossible for Astaldi to meet the target schedule – given that the ICS was not yet constructed and therefore no work could take place during the winter – Nalcor chose to maintain the schedule. There was a downward spiral as a result of this decision:

I think if the mobilization happened back in June 2013 we would be saying now that the ICS was a great idea because it would have been completed in the summer season, used in the winter [Bader, 8 May 2019, page 73].

118. Internal Astaldi emails contain a recommendation not to sign the contract at the end of 2013 which maintained the original schedule milestones [P-03140]. Astaldi nevertheless proceeded. Nalcor was also clearly aware in 2013 – or should have been aware – that the proposed schedule at financial close was not achievable. In November 2013, Ron Power (“Power”), the Muskrat Falls Project Manager, sent an email to members of the PMT outlining the “Astaldi saga” and outlining his clear concerns with Astaldi [P-03039]. In December 2013 Nalcor acknowledged the “major concerns” with regards to the schedule [P-03021]. Yet, Nalcor provided no public



disclosure as to what had occurred nor did it inform Government or the public of the inevitable schedule delays.

119. One option was to change the Astaldi start time from the winter of 2013 to the spring of 2014.

Delarosbil testified that working in winter takes three times as long as non-winter work. In his opinion, “it would have been wise to pause at that point and start the construction work probably in the – April months, you know, unless there was a real sense of urgency. If there was a real sense of urgency, then you can justify starting at that time and spending the money to get ahead. So it’s time and money, starting in the winter is time and money” [Delarosbil, 8 May 2019, page 70]. Starting mobilization in “November instead of June you’re not just losing four months, you’re probably losing ten months. You almost lost a year of construction” [P-01677, page 34].

120. **Astaldi Failure**: The early-warning signs that Astaldi would not succeed came to fruition early in 2014 when Power called the Astaldi situation on site “hopeless” – a site that had been taken over by Nalcor after SNC was dismissed as the EPCM contractor. Power said Astaldi was on a “road to failure” and noted that the schedule was probably lost [P-03047, page 2]. Pat McCormick, a site worker, stated that as soon as Astaldi arrived on site, they were “lost in the wilderness. They had no idea what they were getting into” – from payroll issues, concrete pouring, labour relations and communications” [McCormick, 27 May 2019, pages 50-51].

121. Following Astaldi’s early failure, the company ran into serious financial difficulties that, according to Harrington, could not have been predicted because they were “black swan events, outside of

anyone's control" [Harrington, 5 June 2019, page 14]. This is, of course, why a project budget needs to include contingency for such events. Black swan events can, and do, happen. Westney gave evidence to the Inquiry that "black swans" are one of leading causes of cost overruns on megaprojects [Westney 16 November 2018, page 8]. Nalcor refused to acknowledge that a black swan would envelop the Muskrat Falls Project, a further example of the optimism bias discussed by Flvybjerg.

122. In terms of disclosure of the Astaldi cost and schedule overruns in the fall of 2015, Ken Marshall, a member of the Nalcor Board of Directors, testified that while the amount was not quantified by Nalcor executive, the Board of Directors knew before September 2015 that Nalcor would require "hundreds of millions" of dollars from the Government in order to save Astaldi from bankruptcy [Ken Marshall, 10 June 2019, page 126]. However, the September 2015 Approval for Expenditure ("AFE") of \$7.65 billion did not include any amounts for the Astaldi issue – known to be in the hundreds of millions – and was therefore not accurate. Michael Kennedy of EY confirmed in testimony that "in September 2015, "the \$7.653 billion AFE or cost estimate was not reasonable" [Michael Kennedy, 13 May 2019, page 62].

123. General Electric/Alstom: Nalcor retained General Electric/Alstom to build the Muskrat Falls switchyards, converter stations and synchronous condensers, which included the provision of associated software. At the time of the Inquiry, there was an ongoing issue with the software, which MacIsaac described as the "single biggest risk" he was dealing with [MacIsaac, 11 June 2019, page 99]. Nalcor chose to purchase custom-designed software when other software was readily available:

So the others who are within the big three in this space – so it's Siemens and ABB and now GE. The other two have a platform where, you know, they basically build one platform and, for each one of the projects – for lack of better description – toggle off and on the functionality that's required to customize it for a specific project [MacIsaac, 11 June 2019, page 100].

124. Alstom and then General Electric had a different approach insofar as their software was developed on a bespoke basis for each one of the projects [MacIsaac, 11 June 2019, page 100].

General Electric has subsequently moved away from this approach. Stan Marshall commented on the software issue:

Yeah, GE had a strange way of developing the software here, you know. It's – like it's all or nothing and it's all unique to the particular contract. You know, I attribute it in part to the fact that people who are in GE days – GE these days the last number of years are not engineers, they're financial engineers. You'd – it's hard to envisage how you proceed with software development this way but, in any case, that's what it is [Stan Marshall, 2 July 2019, page 7].

***Section 2.3: Whether the overall project management structure Nalcor developed and followed was in accordance with best practice, and whether it contributed to cost increases and project delays***

125. **SNC as EPCM Contractor**: SNC was retained as the engineering, procurement and construction management (“EPCM”) contractor in February 2011. Nalcor's original preference was to do an integrated team from the outset [Power, 21 May 2019, page 30]. However, it became clear to Nalcor that the marketplace required an experienced EPCM contractor for the Project [Hussey, 1 March 2019, page 73]. The EPCM model is preferred for several reasons, including that it presents with a lower risk capacity because decisions and responsibility are downloaded to the EPCM contractor [P-1817, page 10; Power, 22 May 2019, pages 52-53]. Despite this, Nalcor still

chose to abandon what had been determined to be the best approach – the EPCM model – and return to what it originally wanted – an integrated team. There was no financial analysis conducted regarding whether the EPCM-model should be replaced [Hussey, 1 March 2019, page 73]. This is particularly troubling because Nalcor's PMT had no experience in hydroelectric project construction.

126. Pursuant to the EPCM contract, Bechard of SNC was appointed the Muskrat Falls project manager. Bechard had experience managing large hydroelectric projects. He had been project manager of the 768-megawatt Eastmain project and reported to the Hydro-Quebec president; Eastmain was delivered six months early and \$300 million under budget. However, it became clear to Bechard that Nalcor had no intention of letting him manage the Project. Nalcor felt it knew what was best and bullied and treated the SNC team with disrespect [Bechard, 26 March 2019, page 50]. Bechard also confirmed that Nalcor had no intention from the start to treat the contract with SNC as a true EPCM contract. Bechard explained that under an EPCM contract, the owner must allow the contractor to have the authority to carry out and execute the project – and the owner only maintains a small team that operates with a hands-off approach.

Everyone that was in the room. So, me – having 40 years of experience; Ed Over that has been the head of procurement – that was 40 years of experience. And Nick Gillis – that was at least 25 years of experience. So, [Paul Harrington] was bullying us, telling: You're incompetent; you will not be able to get the job done. I'm not satisfied. And he was yelling, yelling. Disrespect. Full disrespect [Bechard, 26 March 2019, page 50].

127. It was described by Jean-Daniel Tremblay ("Tremblay") of SNC that Nalcor and SNC had "a difference in perspective with respect to the work to be done and how it should be done" [Tremblay, 25 March 2019, page 77]. SNC had experience in hydroelectric megaproject

construction – which is essentially heavy civil construction. Nalcor, on the other hand, had experience in the oil and gas industry. Tremblay said this created tension with SNC – “on the Nalcor side there were very few people who had extensive experience in hydro, and on the SNC side we had very little people who had extensive experience in oil and gas” [Tremblay, 25 March 2019, page 77]. As a result, according to Tremblay, “one of the major issues on the project is the fact that you had two groups coming from different avenues having very different perspective on how to organize and develop a megaproject” [Tremblay, 25 March 2019, page 78].

128. Tradespeople agreed that SNC were the best in Canada for a project like Muskrat Falls [Wade, 27 May 2019, pages 36; McCormick, 27 May 2019, page 87]. Yet Nalcor still chose to terminate SNC as the EPCM contractor. SNC described it as a “takeover” and that SNC individuals were “pushed aside and their opinions are not being listened to”:

The integration and a – it was a Nalcor takeover and SNC was kind of pushed aside. Absolutely, that’s the general feeling and everybody was: Okay, Nalcor has the authority and we just have to do what they want, and that’s it [Tremblay, 25 March 2019, page 79].

129. Even upon switching to an integrated team, Nalcor failed to utilize SNC’s expertise:

I guess another one would be what the integrated team looked like. I talked about that quite a bit already, but we believed that while SNC wasn’t going to have the leadership position in all the boxes anymore, that there were some key leaders that would really benefit the project, and they were—they didn’t agree with that [Thon, 25 March 2019, page 138].

130. It was not truly an integrated team. It was a team dominated by Nalcor.

**MR. HOGAN:** Who would be in charge then? SNC is the engineer; it's an integrated team approach. We've been told would have leaders from both teams, both Nalcor and SNC. Is that the way you felt it was on site?

**MR. DELAROSBIL:** Leaders from Nalcor and SNC? No, they were all leaders from Nalcor. There was a few SNC guys there, the engineer – hey Georges – and there was the civil package manager was SNC [Delarosbil, 9 May 2019, page 99].

131. An objective review concluded that 50% of the integrated leadership team should be Nalcor and 50% should be SNC [P-01842, page 6]. However, the only SNC member on the integrated team in a leadership role was Bechard. In fact, no one from SNC had any authority once the integrated team was created [Thon, 25 March 2019, page 125]. Bechard noted what was missing upon the creation of the integrated team:

I'd say that there was – to me the main expertise that was missing was the management of such a huge project. Like, this project is really, really huge. You got a lot of logistic. You got contract management. You got procurement. There's a lot of details in those type of project, so you need to have seasoned people that have been living in their life, through the steps to get to that position [Bechard, 27 March 2019, page 4].

132. Bechard also specifically noted that members of the integrated team did not have the requisite experience of having worked in winter conditions for hydroelectric projects [Bechard, 27 March 2019, page 4].

133. Nalcor was warned that the approach to proceed without the requisite hydroelectric expertise was a risk. Scott Thon ("Thon") of SNC noted that it was clear Nalcor was "trying to bring a discipline from other large projects in oil and gas to the hydro project" which was a risk. Thon stated:

[Owners often feel they] can develop an in-house competence for that. But in my experience that is very rare and you have to have the discipline as a leader that you make

sure that you've brought in some experts, and so really that was the – my voice. It's in – and my recommendation is, let's not – you may be unhappy with SNC-Lavalin's performance, but don't let that colour you in removing key leaders you're gonna need to be successful on a project that you don't have any experience in and doing" [Thon, 25 March 2019, pages 114-115].

134. Mallam noted that owners tend to have a hard time "letting go" and warned about this in September 2010 [P-00491, page 27]. This is, of course, what happened.

Yes; what we were talking about here is that at some point the owner's management team has to hand over substantial parts of the project management to the EPCM contractor to do that management function. And, there's frequently a tendency to not let go of that. It's been your baby up to that point and there's like, a natural human reluctance to let go, and we'd observe that. So, our comment was that they have to do that if the project is to be effectively managed [Mallam, 17 October 2018, page 5].

135. It was a fatal error to remove SNC as the EPCM contractor. The experience of the Nalcor PMT paled in comparison to what SNC, as EPCM contractor, had to offer.

136. Nalcor Hydroelectric Experience: Once SNC was terminated as the EPCM contractor, ultimate responsibility for the delivery of the Project fell to Nalcor. However, Mallam testified that the senior management team at Nalcor had "little or none" hydroelectric development experience [Mallam, 17 October 2018, page 29]. Bennett testified that the prior experience working with Martin at Petro-Canada was a factor in several members of the PMT being hired to work on the Muskrat Falls Project [Bennett, 21 June 2019, pages 6-7].

137. Harrington had never worked on a hydroelectric project prior to becoming project director at Muskrat Falls. He did not apply for an advertised position; he was recruited directly by Martin and Bennett [Harrington, 19 November 2018, page 11]. Despite this being his first hydroelectric

project, Harrington did no research on success and failures of hydro projects nor did he look to applicable trends [Harrington, 19 November 2018, pages 91-92], not even after being prompted to do so by Bown [P-00810].

138. Bennett was unaware until Harrington's testimony at the Inquiry that prior to the Muskrat Falls Project, Harrington had no experience assessing risk, including strategic risk, and how such risks might impact a megaproject [Bennett, November 26, 2018, pages 16-17].

139. Power was touted as the person on the PMT with hydroelectric experience, but he in fact had no experience working on a project the size and scope of Muskrat Falls. Power's position was not advertised; he was recruited by the PMT. It was evident from Power's own evidence that his hydroelectric experience was limited and included work in Africa; work at the 40-megawatt Granite Canal project; a feasibility study at Silver Mountain, which never proceeded; rehabilitation work at the Upper Churchill which did not involve new construction; work at the 5-6-megawatt Petty Harbour; and work on a small dam at Glynmill Inn Pond. None of these projects are close to the scope of Muskrat Falls.

140. Workers testified that lack of appropriate hydroelectric experience led to issues on site:

But, like, you have to understand is that not a lot of people, even within Nalcor – so there are some very good engineers, some very good people in (inaudible) Nalcor. But with a project like this, Newfoundland and Labrador haven't done one since Churchill Falls. This is extremely complex and very large high-powered equipment [Snook, 15 March 2019, page 10].

141. Workers also testified as to the lack of planning on site:



And it said to me, like, you can't run a job if you don't know your next step. You have to know what you're doing tomorrow or the day after – yeah, at least a week ahead of you; you got to be able to figure out what you're doing for the next week. It changes because temperature; it changes because of manpower or weather. But you have to have a bit of foresight of what you're gonna be doing tomorrow. And there was no – zero planning. I mean, that's – to me, that was the main issue why there's cost overruns, I guess. The lack of knowing what you're gonna be doing next – it's gonna inherently bring you extra costs. It's chaos. That's what I'd call it [**Cavaliere, 15 March 2019, pages 10-11**].

142. The Nalcor lack of hydroelectric expertise is particularly concerning given the complexity of the Muskrat Falls Project which included not just construction of a generation component, but a very significant transmission component. Stan Marshall testified that Muskrat Falls is a very complex hydroelectric project because of things like the North Spur and the type of turbines (which are some of the largest installed in the world and much bigger than the ones at the Upper Churchill). In its own right, Muskrat Falls was a challenging piece of work, but Stan Marshall added that the one big difference with Muskrat Falls was the transmission component:

So everybody was focused on Muskrat Falls, whereas in my mind, the most complex and challenging aspect was the transmission, where you're going to tie in for the first time the Island of Newfoundland to Quebec and to the Maritime provinces. And at the same time, you're going to bringing on this massive new plant. It was hellishly challenging. And at the same time, you're going to bring in HVDC technology, which no one in the province had experience with, because, you know, the demand for expertise in that area globally is horrendous, and so we were going to bring this on stream and – with no experience.

And so I was more content to leave the – more – my focus on the transmission side rather than on generation alone. Of course, I got to go from one to the other on an almost daily basis [**Stan Marshall, 28 June 2019, pages 40-41**].

***Section 2.4: Whether the overall procurement strategy developed by Nalcor for the project to subdivide the Muskrat Falls Project into multiple construction packages followed industry best practices, and whether or not there was fair and competent consideration of risk transfer and retention in this strategy relative to other procurement models***

143. Grant Thornton concluded that the decision by Nalcor to use large contract packages was “contrary to their research which indicated that smaller work packages work better.” This decision was also contrary to “SNC’s opinion that the construction packages should be smaller” [P-01677, page 110].

***Section 2.5: Whether any risk assessments, financial or otherwise, were conducted in respect of the Muskrat Falls Project***

144. **Risk Assessment at DG2 (Pre-Sanction)**: Nalcor failed to appropriately assess risk and also failed to communicate appropriate risk information to the Government, the Board of Directors, the PUB and ultimately the public – all of whom should have been fully advised.

145. A briefing note, entitled “Summary of Pre-Sanction,” was prepared for the purpose of the Inquiry by current and former members of the PMT. The Summary of Pre-Sanction briefing note states:

During the negotiations that led to the Term Sheet with Emera, Nalcor Executive made a conscious decision to drop the provisional strategic risk allowance recommended in the DG2 QRA stating that it was required to respond to Emera’s concern regarding its ability to sell the strategic risk concept to the Nova Scotia regulator, the Nova Scotia Utility and Review Board (UARB).

Nalcor further reaffirmed its position re risk allowances as part of the Newfoundland and Labrador Board of Commissioners of Public Utilities (PUB) Muskrat Falls Review, wherein it stated:

With the extent of the mitigation activities undertaken and in progress, and probabilistic cost reductions in the order of -\$400 million being available and a P50 strategic exposure of \$290 million (in the range of \$187 million (P25) to \$413 million(P75)), Nalcor executive determined that it was not appropriate to create a

positive or negative strategic reserve amount at DG2. These factors were also considered in establishing Project tactical contingency at 15%.

This step signified a shift in risk appetite. From this point forward, allowance for strategic risk exposure was not carried in capital cost inputs provided for CPW modelling, through to DG3. Rather it was believed to be understood that all such exposure, should it materialize, would be funded by contingent equity available from the Province... [P-00264, pages 19-20].

146. Kean was the primary author of the DG2 (as well as the DG3) Risk Analysis documents, which were finalized, respectively, in 2011 and 2012 [Kean, 7 November 2018, pages 55-65]. In a June 2011 version of the DG2 Risk Analysis document, it refers to a P50 proxy estimate (proxy meaning not based on a QRA but based on Kean's own updated estimate using a previous QRA) resulting in Estimate (tactical) Contingency of 15%, Strategic Risk Exposure of 6%, and a Full Power Date of June 2017. It also states that prior to sanction these estimates must be "thoroughly reviewed and reassessed for suitability considering the design maturity of the project as well as Nalcor's risk appetite." There is also a "Note" that states:

During the negotiations of the Term Sheet with Emera, Senior Management elected to drop the Strategic Risk Exposure allowance of 6% from the overall capital cost recommendations for both the Muskrat Falls and Labrador – Island Transmission Link Projects in order to address Emera's concern regarding its ability to sell the Strategic Risk concept to it's the Nova Scotia regulator, the Nova Scotia Utility and Review Board [P-00808, page 26].

147. In a later version of this DG2 Risk Analysis document [P-00097] (September 2011), the "Note" on page 26 of the June 2011 version [P-00808] was removed. Kean testified that he removed it to bring it into "alignment" with Confidential Exhibit 52 ("CE52") that had been filed by Nalcor at the PUB for the 2011 Reference Question [P-01003]. Therefore, CE52 did not include an amount for strategic risk.

148. While Kean's "note" [P-00808, page 26] refers to Emera's concern about its ability to sell the strategic risk concept to the NSUARB, Chris Huskilton, CEO of Emera, provided a letter to the Inquiry which stated that Emera did not ask Nalcor to *remove* strategic risk from consideration, but rather asked the general term "risk" be used as opposed to separating it into two terms of "strategic" and "tactical" to avoid confusion [P-01462]. However, rather than combine strategic risk and tactical risk, Nalcor completely removed the 6% strategic risk from the DG2 cost estimate [Kean, 7 May 2019, pages 56-57].

149. Based on the evidence of Sturge, Nalcor was motivated to lower the cost of power for the Nova Scotia Block (Block A) to get the Maritime Link approved by the NSUARB [Sturge, 31 October 2018, pages 60-68]:

**MS. O'BRIEN:** Okay.

And I know you had said that there was a – you wanted to get the – in talking with you and preparing for today I understand there was a – you recall there being a need to get the price down for Nova Scotia Power from Muskrat Falls below \$125 or something like that?

**MR. STURGE:** Yes, so we were working to get in that range, yeah [Sturge, 31 October 2018, page 65].

150. This led Nalcor to take two steps to lower the DG2 cost estimate: (i) removal of the 6% strategic risk altogether from the cost estimate rather than combining it with tactical risk; and (ii) choosing P50 rather than P75. Bennett acknowledged that getting the lower cost was necessary to get approval of the NSUARB and these decisions were made for that purpose. It ultimately was the decision of Martin, but Bennett acknowledged he was fully aware and would have been consulted about this [Bennett, 26 November 2018, pages 61-62]. Bennett justified these actions by saying

NSUARB approval was needed to get the federal loan guarantee, which he referred to as a “strategic opportunity” [Bennett, 26 November 2018, page 64].

151. In accordance with the above, when the \$5 billion estimate was announced at DG2, there was no amount in that number for strategic risk. The \$5 billion estimate did include a 15 per cent estimate for tactical risk only. Sturge agreed that there is no real difference between strategic risk and tactical risk insofar as the outcome of both is the same – if they come to fruition, the result is more cost [Sturge, 31 October 2018, page 67].

152. In order to adhere to Nalcor’s decision to fund the DG2 estimate at a P50 level, the 6% strategic risk on top of the \$5 billion was needed. Kean, in fact, thought it was appropriate to fund the Project at a P75 level, which means the 6% plus \$600 million was required for strategic and tactical risk [Kean, 7 November 2018, pages 63-64].

153. There is no evidence that either Bennett or Martin informed the Board of Directors or the Government that Nalcor had elected to proceed using a P50, that strategic risk was not included in the DG2 estimate, or the implications choosing a P50 versus P75 had on the DG2 estimate. Bennett acknowledged that despite its removal, some strategic risks still existed at DG2 and if they arose, they would have to be funded [Bennett, 26 November 2018, pages 65-66].

154. The Board of Directors was informed in the DG2 Decision Support Package that a contingent equity commitment of \$300-600 million from the Province was considered prudent and necessary. However, Kean confirmed this \$300-\$600 million did not include the 6% strategic risk and could not explain why it was presented to the Board of Directors as a range rather than as

the \$600 million he says he was comfortable with to get the estimate to P75 [Kean, 7 November 2018, pages 62-63].

155. Bennett acknowledged that the statement in CE52 - that Nalcor executive determined a strategic reserve was unnecessary at DG2 – is an incorrect statement [Bennett, 26 November 2018, page 68]. Bennett also confirmed that at DG2, a contingent equity commitment of \$300 to 600 million from the Province was considered to be prudent and necessary, as was communicated to the Board of Directors but which does not appear to have been communicated to the Government [Bennett, 26 November 2018, pages 66-67].

156. Risk Assessment at DG3 (Sanction): Using a P50 value, approximately \$500 million in strategic risk was identified at DG3 but was not included in the DG3 cost estimate nor was it included in the CPW calculation [P-00014, page 61].

157. The Independent Project Review team (the “IPR”) recommended that management reserve and schedule reserve be included in the sanction costs and schedule [P-00508, page 4]. Harrington explained he disagreed with this recommendation, despite the fact the LCP Sanction Decision document specifically includes strategic risk as part of the “Project Estimate” [P-00890, page 15]. The Board of Directors and the Government were unaware of this recommendation, which Bennett ultimately acknowledged was a failure [Bennett, 28 November 2018, pages 9-10].

158. A briefing note, entitled “Sanction Decision” was prepared for the purpose of the Inquiry by current and former members of the PMT and it that confirms strategic risk was not included in the DG3 estimate in 2012:

This \$6.2 B value would become the Project Sanction or original DG3 Project Control Budget, and contained a P50 estimate contingency, with no provision for strategic risk, time-risk, or foreign exchange risk. The \$6.2 B was internally characterized by the Project Team as an aggressive cost basis because there was no provision for the identified strategic risk exposure. At Decision Gate 2 there had been a push to remove it during negotiations with Emera with the intention to reconsider including it at Decision Gate 3. This however, did not occur due to the desire of Nalcor Executive to maintain the estimate at \$6.2 B [P-00894, page 17].

159. The Sanction Decision briefing note also refers to the engagement of John Hollmann of Validation Estimation LLC (“**Validation Estimating**”) at DG3 “to complete a review of the process used to develop the Decision Gate 3 estimate in order to confirm that the process had been sufficiently robust and inclusive for a Class 3 Estimate” [P-00894, page 10].

160. The following quote from Hollman’s draft report was cited frequently by Nalcor in the lead up to sanction and is also referred to in the Sanction Decision briefing note:

***“...the LCP Gate 3 estimate in its current state is one of the best mega-project “base” estimates that this reviewer has seen in some time. My conclusion is that this is in large part due to the active involvement of the owner leads in striving for best practices and quality.”*** [P-00894, page 10]

161. Kean and Nalcor used this statement from Hollman’s report extensively in communications and presentations to the Board of Directors, the Government and the Federal Government to trumpet the reliability of Nalcor’s DG3 estimate (see for example, P-01009, page 87 and P-01008, page 37). In doing so, Kean proclaimed Hollman’s professional credentials and awards to

presumably bolster the value of the statement. Thomas Marshall testified that he thought the DG3 base estimate was a great estimate pointing to the review by Validation Estimating [Thomas Marshall, 6 November 2019, pages 6, 9, 36, 72 and 86].

162. The use by Nalcor of the quote from Hollman by itself without the full context is misleading. First, Hollman's report was a "draft", and not a final version. Second, when utilizing the quote, Kean left out the preamble phrase "First, it should be noted that while not perfect...". Third, on pages 4 and 5 of Hollman's "draft" report, Hollman points out important limitations in the scope of his review, including that his review was qualitative in nature [P-00610]. Kean acknowledged that Hollman did not do a "deep dive" into the numbers or review quantities or pricing other than spot checks [Kean, 7 November 2018, page 77]. Fourth, Hollman identifies material weaknesses and criticisms of Nalcor's DG3 estimate which were not communicated by Nalcor when referring to Hollman's quote [P-00610, pages 10-17]. Among other things, Hollman's criticisms included using "weak logic" in treatment of risk costs, and the use of ambiguous, confusing terminology in defining tactical and strategic risk. Hollman also pointed out that most strategic risks are not negotiable and have 100% probability of occurring, with the only uncertainty being the scale of impact. Hollman also recommended that Nalcor conduct appropriate risk analysis based on probabilistic outcomes and recommended best practice cost and schedule contingency and reserves allowances prior to DG3 [P-00610, page 5]. Hollman stated further that "If no schedule contingency is allowed, cost contingency will be increased to allow for risk responses driven by the assumed objective of schedule preservation" [P-00610, page 10]. There was no cost



contingency increase in the \$6.2 billion figure to allow for schedule contingency despite the virtual certainty of not achieving schedule.

163. The selected use of Hollman's quote by Kean as an endorsement without limitations was misleading to the Government, the Board of Directors and the Federal Government. Bennett agreed it was misleading [**Bennett, 26 November 2018, page 89**]. Harrington testified that he would have preferred to know about the weaknesses pointed out by Hollman, and if he had, he would have made Bennett aware [**Harrington, 19 November 2019, pages 62-65**].

164. Kean acknowledged that it was his own company, Project Solutions Inc., that engaged Hollman and Hollman's report was addressed to Project Solutions Inc. [**P-00610**]. There was no evidence the draft report was distributed within Nalcor or to the Government. The only evidence of it being shared is an email from Kean to Mark Turpin attaching the Hollmann report, but Turpin was instructed not to circulate it or leave it "lying around" [**P-00957**]. When asked why the report was only a "draft" and was not distributed within Nalcor or given to the Government, Kean's explanation was that it was not a "higher level" report like the IPA or MHI reports, but used as an "internal peer review" [**Kean, 7 November 2018, page 74**]. Bennett learned of this through the Inquiry and acknowledged it was concerning. Bennett could not offer a good reason why Kean should not have circulated it [**Bennett, 26 November 2018, page 90**].

165. As for quantification of strategic risk at DG3, Nalcor had determined there were three remaining strategic risks which totalled \$497 million (rounded up in other documents to \$500 million), those being time risk, performance risk, and labour risk (which was broken down into labour

productivity and availability of skilled labour) [Harrington, 19 November 2018, pages 65-66].

This determination followed risk workshops held with Westney Consulting in May 2012.

However, Hollman's draft report was not shared with Westney Consulting [Kean, 8 November 2018, pages 60-61].

166. Tactical risk (contingency) was also discussed at these May 2012 workshops with Westney Consulting. Following the workshops, Nalcor selected a P50 value, resulting in tactical contingency of \$368 million, which was 7% of the total \$6.2 billion cost estimate. Immediately following the larger group risk ranging session in May 2012 with Nalcor and SNC representatives, Kean and Harrington flew to Houston to meet with Dodson. After this meeting, the tactical risk number was reduced by \$167 million [Harrington, 19 November 2018, pages 85-86]. At DG2, tactical contingency had been 15%.

167. Grant Thornton asked Validation Estimating how the contingency can be only 7% on a project that was so complex. Validation Estimating noted that "something is very wrong, it's driven by the management – what they want. If they had \$300 million contingency that should have been a billion" [P-00014, page 62].

168. According to Westney, this 7% tactical contingency was broken down further into 3.1% tactical contingency for the Labrador-Island Link. Westney agreed that a 3-plus per cent contingency on a 1,100-kilometer transmission line, which includes an undersea cable and travels over some very difficult terrain and counts as a megaproject itself, seemed low [Westney, 16 November 2018,

**pages 26-27]. Harrington acknowledged during the Inquiry that 3% seemed low [Harrington, 19 November 2018, page 91].**

169. At DG3, no amounts were included in the calculation of the \$497 million management reserve/strategic risk reserve or tactical contingency for:

- lack of organization experience and resources for a project of this size, **[P-00130, page 146];**
- risk associated with the change from EPCM to an integrated management team and the fact that SNC would no longer be providing an indemnity effective April 1, 2012 for anything other than engineering services **[P-01446]**. Bennett testified that Harrington “owned this risk” and that if Harrington felt an amount should be included, he would have expected Harrington to bring it to him **[Bennett, 27 November 2018, page 55];**
- changes in project scope/system integration **[P-00130, page 150]** (note that scope changes for the LIL transmission system eventually did materialize) and that scope changes are often a driver of cost and schedule increases. Harrington referred to the scope changes after Dark NL as a “black swan” event **[Harrington, 19 November 2019, page 78]**. While Harrington discussed the fact that not being able to put a value on a black swan event, the point is they can occur and therefore need to be accounted for **[Harrington, 19 November 2019, page 6];**
- lack of support from Aboriginal Groups and other non-governmental organizations **[P-130, page 158]**. Notwithstanding Aboriginal communities were expressing concerns and complaints at the time leading up to sanction, Bennett directed Kean not to include these strategic risks because the risk was diminishing **[Bennett, 27 November 2018, page 46]**. It is noteworthy that the Joint Review Panel had recommended full clearing of the reservoir,

which was supported by various Aboriginal groups, but that the province had rejected, and that the first work site interruption occurred in the fall of 2012 [P-01001]; and

- risk that a major contractor might fail on the project for whatever reason – financial or otherwise; lack of geotechnical information [P-00887, page 161]; and foreign currency exchange.

170. MHI was retained by the Government to conduct an independent review of Project costs, but MHI was not advised by Nalcor of the existence of \$500 million in strategic risk. MHI were publicly put forward by the Government as having conducted an independent review of the cost estimates, yet MHI was not aware of this strategic risk amount, and therefore did not review it. In fact, slide 12 of a June 2012 DG3 Cost Estimate presentation from Nalcor [P-00817, page 14], which discussed external/strategic risks (which includes performance risk, competition for resources, and schedule risk), was removed from the version of that slide deck presentation given to MHI [P-00818]. In Westney Consulting's Estimate Accuracy Analysis for the LCP May 23 – June 4, 2012 [P-00763], which was provided to MHI, there is no reference to a \$497 million strategic reserve, presumably because Westney Consulting also was not aware of it. It is difficult to conclude that the MHI review was complete and robust given that issues such as these were not brought forward to and reviewed by MHI.

171. Robert Thompson ("**Thompson**"), a former Government bureaucrat including being Clerk of the Executive Council, did not know about the removal of the \$500 million reserve at sanction, referring to it as "jarring" that he was not aware of this information [Thompson, 14 November

2018, pages 75-76]. Thomas Marshall was also not aware of the removal [Thomas Marshall, 6 November 2018, page 3]. Kennedy was not aware and testified that “anything that increased the cost of the project – either side – was something that, yeah, we should’ve been aware of” [Kennedy, 3 December 2018, page 9]. Sturge’s view was that there should have been a more open discussion of the \$500 million and reasons for inclusion or exclusion should have been more properly documented, and leave it at that [Sturge, 31 October 2018, page 16].

172. A common justification provided at the Inquiry for not setting a management reserve to account for strategic risk is to ensure contractors do not see “red meat”. There was no evidentiary basis provided at the Inquiry to support this theory. Rather, the theory was perhaps convenient for Nalcor and consistent with the approach to keep relevant cost information from the public. The ultimate form of red meat was well known to all: the Muskrat Falls Project was to be funded by ratepayers and further guaranteed by the taxpayers through contingent equity and the completion guarantee.

173. In September 2012, the PMT re-ran the schedule analysis, but were told by Westney Consulting that the probability of achieving first power by mid-2017 was low. In the risk adjusted schedule for first power in the DG3 Project Cost and Schedule Risk Analysis [P-00130, page 297], the reference to P1 probability was removed even though it was included in previous versions of this document. Kean could not recall whether it was he or Harrington who made the decision to remove it. However, in reply to an email from Kean explaining that Harrington had made changes to Westney

Consulting's draft report, Dodson expressed his view that he did not like the removal of the box showing P1 schedule probability but that he would not "fight" Nalcor on it [P-01051].

174. Cumulatively, the above illustrates that Nalcor took an aggressive approach to identifying and quantifying risk. Nalcor failed to set aside sufficient contingency to fund risks (whether strategic or tactical), and furthermore failed to communicate important risk information in a forthright manner to the Government, the Board of Directors, professional advisors engaged by Nalcor, and ultimately to the public.

***Section 2.6: The commercial arrangements Nalcor negotiated were reasonable and competently negotiated***

175. **Tom Brockway (Grant Thornton):** Tom Brockway ("Brockway") of Grant Thornton prepared two reports related to the commercial arrangements of the Muskrat Falls Project.
176. The first report, entitled "Review of the Emera Agreements and the UARB Experience" provides a review of the 2010 Term Sheet and related commercial agreements between Nalcor and Emera, highlighting significant commercial terms that would impact ratepayers and taxpayers, as well as a review of the Nova Scotia Utility and Review Board (the "NSUARB" or the "UARB") oversight of the Maritime Link project [P-00453].
177. The second report, entitled "Review of Federal Loan Guarantees and the Power Purchase Agreement" is a review of both federal loan guarantees (collectively referred to in the report as "FLG") and the Power Purchase Agreement ("PPA") to highlight the terms and conditions of each

agreement, amendments to Provincial legislation to facilitate the FLG and the impact each of these agreements have on NL ratepayers and taxpayers [P-00454].

178. Both Brockway reports contain findings relevant to the impacts on both ratepayers and taxpayers and both reports provide useful analysis and information relevant to the following sections of this submission.

179. **Federal Loan Guarantee - Condition Precedent:** The Muskrat Falls Project moved through the sanction stage without certainty that the federal loan guarantee was in place. Sturge testified that when the Government sanctioned the Project and when Nalcor and Emera entered into the sanction agreement in December 2012, Nalcor and the Government thought all condition precedents for the federal loan guarantee had been met. Sturge acknowledged Nalcor later realized they were wrong because the commitment of Emera was subject to approval by the NSUARB. Emera had not even applied for NSUARB approval in 2012. On this issue, Dunderdale stated:

Well, we understood, at the time of sanction, that the arrangements that Emera had made with the Government of Nova Scotia were satisfactory to the point that we could go ahead – and sanction with assurance on our part that the loan guarantee was in place, that Nova Scotia had satisfied the federal government. It was only after the fact – after sanction – that it was brought to my attention that the arrangements that had been put in place by Nova Scotia were not acceptable. The conditions precedent weren't considered to have been met [Dunderdale, 18 December 2018, pages 2-3].

180. While Dunderdale knew at sanction that the matter still needed the approval of the NSUARB, it “was only after sanction that I was made aware and we were made aware, as a government, that the government of – the federal government said: No, conditions precedent weren't met and another piece of work had to be done” [Dunderdale, 18 December 2018, pages 2-3].

181. Dunderdale testified that she would not have proceeded with the Project without the federal loan guarantee, yet the Project was sanctioned without it (one year prior to the guarantee being finalized). While she knew there still had to be financial close after the 2012 sanction, she simply felt “there was a very high comfort level that we were gonna be able to do this” [Dunderdale, 20 December 2018, page 10]. However, the Government of Canada later advised there were conditions precedent that had not been met, thereby putting sanction at risk after-the-fact.

182. Dunderdale admitted there was obviously a flaw somewhere at the time of sanction regarding the Government’s understanding of the federal loan guarantee status [Dunderdale, 2 April 2019, page 10]. However, this issue was not unknown, as it was pointed out in the House of Assembly on 5 December 2012, two weeks prior to sanction, that Emera was not yet committed. Dwight Ball (“Ball”), Leader of the Official Opposition at the time, stated in the House of Assembly:

When I look at where we are today with the loan guarantee, we need the region, we need Emera, and we need Nova Scotia in place with certainty for this to happen. As I stand here today, Mr. Speaker, I am not left with any degree of comfort that this loan guarantee is in place because of our partner in Emera. There are a number of things, regardless of what we say, and words sometimes say a lot more than our actions could.

I just want to read this. This is December 5, so it is fairly fresh stuff. “Emera Inc. said it will apply to the Nova Scotia Utility and Review Board for a rate increase to cover the cost of the Maritime Link by mid-January, after it has signed an agreement to build it. If the Utility and Review Board decides the Maritime Link is not in the interests of ratepayers, Emera Inc. will have several choices: its shareholders can finance the entire Maritime Link, it can look for partners or it can walk away from the project.” [P-01523, page 31].

183. In March 2013, legal counsel for Canada, Alison Manzer (“Manzer”), was able to recognize the federal loan guarantee was “conditional on the UARB results” and that “the conditionality of the sanction is such that we cannot accept the proposition that sanction is complete until that UARB



ruling has been issued” [P-02703, page 2]. Like Ball, Manzer had recognized that a satisfactory UARB ruling was a condition precedent, yet the Government and Nalcor erroneously reached a different conclusion in 2012.

184. While Dunderdale stated she “wouldn’t personally have had a high comfort level with going to sanction if we didn’t have the loan guarantee,” but the fact is, she did just that [Dunderdale, 20 December 2018, page 11]. Kennedy acknowledged it is a “fair point” to suggest that proceeding to sanction without the NSUARB decision resulted in lost negotiating power with Emera in relation to the Excess Energy Agreement [Kennedy, 5 December 2018, page 18].

185. Federal Loan Guarantee - Effect on Ratepayers: The decision was made to proceed with the federal loan guarantee and as security for the guarantee, legislation was passed to ensure ratepayers would pay for the entire cost of the Project [P-02667]. This fact appears to have been overlooked and not given much consideration, but rather was viewed simply as a necessary step in the overall Project. It was stated by Todd Stanley (“Stanley”), a lawyer with the Department of Justice, that “it was a structure to this project that was inherent in the Province of Newfoundland and Labrador carrying on this project alone, because at the end of the day, somebody’s got to give the completion guarantee. So there weren’t that many ways to deal with that issue...” other than the legislation [Stanley, 22 October 2018, page 77]. Sturge confirmed the security given to Canada – being that the ratepayers would fund the project – was a “key piece” in proceeding with the “single-largest infrastructure financing” in Canada [Sturge, 31

**October 2018, page 45]**. The federal loan guarantee all but assured that the Project would have to be completed [**Mullaley, 30 May 2019, page 41**], no matter what the cost to ratepayers.

186. Dunderdale took comfort in the fact that Canada had provided the federal loan guarantee because Canada “had skin in the game, who were going to, you know, give us a loan guarantee and take on a responsibility and book – \$4 billion” [**Dunderdale, 2 April 2019, page 43**]. However, Canada really has no skin in the game – the cost to complete the Project always rests with Nalcor and the ratepayer. That was the satisfaction that Canada and the financiers had – the ratepayers acted as the security.

187. Not only did the Government saddle ratepayers with the entire cost of the Muskrat Falls Project, there appears to be no agreed upon or pre-determined mechanism (legislative or otherwise) for ratepayers to challenge whether a cost attributed to the Muskrat Falls Project is valid. Conceivably, there could be expenditures that the IE or the Federal Government view as costs of the Project that ratepayers view as unreasonable and therefore, from the ratepayer perspective, should not be built into rates. On this issue, Bown testified:

That’s an outstanding question at the moment, and that’s a question best put to the premier or the minister. I’m not able to answer right now. [**Bown, 15 May 2019, page 83**].

188. Premier Ball said:

The only thing that I’m aware of is that, you know, this particular project – and I know exactly where you’re going, ‘cause I’ve, you know, had those questions myself – is that this particular project would not be as part of the – would be exempt from the regulated. So that’s pretty much all I could say about this. It’s not something that can be reviewed by the PUB, but I do understand your concerns [**Ball, 4 July 2019, page 14 and pages 28-29**]

189. **Blank Cheque:** At no time was there a maximum amount of money provided to Nalcor for completion the Muskrat Falls Project, nor was there ever a specific amount identified and budgeted by Government to fund contingent equity requirements that were certain to occur. As a result, what was provided to Nalcor was essentially a “blank cheque”. As Premier, the only assurance Dunderdale received from Martin regarding a maximum cost overrun was a “casual conversation” in which Martin stated that the overrun risk “would be about \$500 million” [Dunderdale, 20 December 2018, page 19]. This casual discussion was the only basis by which the Premier determined the “worst-case scenario” cost of the Project. Thomas Marshall had a conversation about potential overruns with Terry Paddon, former Auditor General, in which they discussed the fact that the Province could handle 50 percent overrun as worst-case scenario [Thomas Marshall, 7 November 2018, page 5]. No such formal analysis was conducted into the affordability of any cost overruns.

190. Nobody pushed Nalcor for a worst-case number. Kennedy stated that he had “been the president of the Treasury Board for a number of years so that overruns were something that we commonly encountered in government, whether it would be building a school or a hospital. So that – we were always aware of risk in a general way” [Kennedy, 3 December 2018, page 9]. Martin agreed he never gave anyone at government “a specific number, but in general terms – I will be frank – you know, I – it would’ve been clear I wasn’t thinking billions. I was not” [Martin, 11 December 2018, page 17]. In fact, Martin testified that a worst-case scenario was not needed because he viewed budgeting for the project as akin to being able to pay for, or fund, the project.

And from a strategic risk perspective, when you say “budget,” to me, I hear “fund” – the ability to fund. In Nalcor’s case, we had to look at that in conjunction with the government

because they were the ones who would be providing the contingent equity. And so from that perspective – is yes, we did budget for it by establishing an agreement with the government that they would fund additional equity to cover things that were unforeseen [Martin, 11 December 2018, page 17].

191. E&Y confirmed that Nalcor was operating on the understand that there was “unlimited funds” being provided by the Government. E&Y noted:

- Not only was there no Management Reserve included in the budget and communicated to Government, Nalcor’s view is the amount of money available for the MF project is unlimited given that Nalcor believes Government will provide whatever funding is required. That has been the practice and experience until now.
- EY told us there is no sense of responsibility at Nalcor for MF cost escalation. The focus is on completing the project regardless of the cost, with government being there to provide unlimited funds. Nalcor’s view is the cost increases are “unfortunate” but the long-term benefits surpass the cost increases [P-03086, pages 2-3].

192. Mel Cappe (“Cappe”), an expert witness in governance and the role of the public service, provided expert opinion evidence to the Inquiry [Cappe, 26 July 2019]. Cappe spoke of the necessity to quantify and account for risk when a government takes on financial risk for a Crown Corporation. Cappe was clear that a government, through its Treasury or Department of Finance, must come up with a number and account for it so that the government is aware of the exposure it is taking on and has properly accounted for it for budgetary reasons. None of this happened in the case of Muskrat Falls and this failure represents an abdication of responsibility by Government to the ratepayers and taxpayers of the Province.

***Section 3: Whether the determination that the Muskrat Falls Project should be exempt from oversight by the Board of Commissioners of Public Utilities was justified and reasonable and what was the effect of this exemption, if any, on the development, costs and operation of the Muskrat Falls Project***

193. The PUB is an independent, quasi-judicial regulatory body appointed by the Lieutenant Governor in Council and operates primarily under the authority of the *Public Utilities Act*, RSNL, c. P-47, 1990. In June 2011 the Lieutenant-Governor in Council referred to the PUB a “**Reference Question**” requesting the PUB review and report to the Government on whether Nalcor’s proposed Muskrat Falls Generating Station and Labrador-Island Link HVdc projects were the least cost option for the supply of power and energy to the Island of Newfoundland as compared to the Isolated Island Option. The Reference Question stated:

The Board shall review and report to Government on whether the Projects represent the least-cost option for the supply of power to Island Interconnected Customers over the period of 2011-2067, as compared to the Isolated Island Option, this being the 'Reference Question'. In answering the Reference Question, the Board:

- shall consider and evaluate factors it considers relevant including NLH's and Nalcor's forecasts and assumptions for the Island load, system planning assumptions, and the processes for developing and comparing the estimated costs for the supply of power to Island Interconnected Customers; and
- shall assume that any power from the Projects which is in excess of the needs of the Province is not monetized or utilized, and therefore the Board shall not include consideration of the options and decisions respecting the monetization of the excess power from the Muskrat Falls generation facility, including the Maritime Link Project.

194. As will be explained below, the PUB review was abbreviated and limited by the Government.

Putting the Muskrat Falls Project before the PUB for a transparent and full review would have provided useful expert oversight and analysis prior to sanction. Furthermore, it would have

allowed for all information to be presented publicly. The evidence at the Inquiry clearly demonstrates that considerable amounts of information were never revealed to the public, partially due to the fact that certain pieces of information were never provided to the Government by Nalcor. Darlene Whalen (“Whalen”), current Chair and CEO of the PUB, confirmed the PUB had the ability to engage in a process with hearings, intervenors and commission reports with the engagement of outside expertise for assistance, if necessary [Whalen, 25 October 2018, page 48].

195. Alteen discussed the tremendous benefits to be gained through a PUB process:

...my experience at the Public Utilities Board is that a lot can be achieved in relatively short time frames. The PUB is quite a competent public policy organ, a regulator, whatever – and they have a full array of what I’d call discovery or disclosure processes that allow them to get to the core of complex matters pretty efficiently. The three principle sort of disclosure processes include an information – written information – request process. These are widely used throughout North American regulatory practice, and they allow participants in a proceeding, such as a reference or an application to acquire large amounts of data, large amounts of information, fully detailed positions of parties in writing early on in the process. There’s also, of course, cross-examination, which is a standard sort of hearing or judicial sort of process that permit interested parties to get at what the proposition is in a particular reference or application or whatever. And finally, there’s a thing called a technical conference. And a technical conference is – tends usually to be an informal process where highly technical issues are discussed between proponents and experts and intervenors or participants in regulatory processes. The purpose of these types of conferences is to provide a way to get at something via repartee, so that, if you’re dealing with a highly expert – technical expert – or you’re dealing with a proponent of a complex proposition, you can inquire into it without the formality of hearings under oath or whatever, and you can scope issues. That is of tremendous assistance when you’re trying to understand some of the complex matters which typically are part of the public utility sort of space [Alteen, 17 December 2018, pages 4-5].

196. **PUB Reference Question:** While the Government and Nalcor had already publicly stated their preference for the Interconnected Option, there was pressure mounting for a PUB review. The

Government ultimately decided to proceed with the Reference Question, which was limited to determining which of the Interconnected Option and Isolated Island Option was preferable. Thomas Marshall testified that he was satisfied the Reference Question was in response to the decision note prepared in May 2011 that suggested a “full review” of the project be undertaken [P-00807; Thomas Marshall, 1 April 2019, page 24].

197. The PUB was given six months to conduct its review for the Reference Question. Greene testified that the six-month timeframe for conducting this type of analysis was very short and challenging. Alteen also testified that it was an “ambitious” timeline given the subject matter [Alteen, 17 December 2018, page 4]. Another issue with the six-month time frame was that the PUB had no existing context or background information about the Project due to the fact Nalcor was not regulated by the PUB [Greene, 24 October 2018, page 28].

198. The PUB communicated to Nalcor that it was critical to receive the necessary information as quickly as possible. The PUB was told that Nalcor was aware the Reference Question was coming, and information would be “immediately and readily available to the board”. The PUB was further assured by Nalcor and NL Hydro that relevant information would be provided to both the PUB and its retained expert advisor, MHI. However, Nalcor consistently failed to comply with its assurances to deliver the necessary information [Greene, 24 October 2018, page 29].

199. The PUB wanted the most up-to-date engineering, financial and economic analysis available, but Nalcor felt only DG2-level information was required and continued to resist requests for information from the PUB [Greene, 24 October 2018, pages 42-44; Whalen, 25 October 2018,

**page 46]**. Bennett confirmed during testimony that Nalcor's position was only DG2 information was required to be provided by the Reference Question and that Nalcor was "gravely concerned" about confusing matters by providing information beyond the DG2 level [**Bennett, 27 November 2018, page 29**]. Bennett testified that the PUB's entitlement was limited to DG2 information by the Reference Question [**Bennett, 27 November 2018, pages 32-33**].

200. Despite purportedly asking the PUB to provide an independent analysis, the Government also questioned the information the PUB was requesting of Nalcor. Andy Wells ("**Wells**"), former Chair and CEO of the PUB, testified that during a meeting in the fall of 2011, Thompson told Wells he was not happy with some of the questions the PUB was asking Nalcor [**Wells, 25 October 2018, page 67**]. Bown contacted Greene and expressed surprise that she had not contacted him with her concerns about documentation from Nalcor before sending letters to Nalcor. In turn, Greene was surprised Bown would have expected her to contact him as opposed to Nalcor. Greene felt it was unusual for the Government to discuss substantive processes with PUB legal counsel while the matter was before the PUB [**Greene, 24 October 2018, pages 50-51**].

201. On 22 September 2011, Wells wrote Minister of Natural Resources Shawn Skinner ("**Skinner**") indicating the PUB would be unable to meet the December 31, 2011 deadline [**P-005676**]. On December 12, 2011, Wells wrote Minister Natural Resources Kennedy requesting an extension until the end of June 2012 [**P-00046**]. On December 23, 2011, Kennedy wrote Wells refusing the extension and setting a deadline of March 31, 2012 [**P-00584**]. Alteen said he expected the PUB's request for an extension to June 30, 2012 would be granted, which indicates Newfoundland



Power did not feel the extension would impair its ability to deliver power to its customers despite Nalcor's and Government's apparent fear of impending power shortages. The concern with the timeline was communicated by Greene to both the Government (Bown), as well as Nalcor and NL Hydro (Geoff Young, Dave Harris, Gilbert Bennett, Paul Humphries, Angela Dunphy) [Greene, 24 October 2018, pages 29 and 31; P-00531 to P-00553 and P-00555 to P-00579] .

202. Thomas Johnson ("Johnson"), then Consumer Advocate, wrote the PUB on December 15, 2011 [P-00582] discussing the need for a thorough review process, including adequate time to review technical reports, conduct public consultations, provide formal submissions, and for the Consumer Advocate to carry out its own public sessions around the province in early May 2012 in order to receive consumer input directly. The Consumer Advocate expressed agreement with the PUB's request for a June 30, 2012 extension and that an earlier date would not be achievable "having regard to the complexity and importance of the matter at hand and the need for not only a due process but due deliberation...".

203. The Consumer Advocate's involvement was limited by the Government. On December 23, 2011, Kennedy wrote the Consumer Advocate stating that "extending the March 31, 2012, completion date would result in a risk of the report not being reviewed in the House of Assembly prior to final sanctioning of the project" [P-00583]. Kennedy also wrote Johnson [P-01216] advising that "the Consumer Advocate may retain such expertise as necessary solely for the purpose of assisting the Consumer Advocate in preparing for any public hearing held by the Board" which Kennedy agreed can be interpreted as not allowing Johnson to file the report at the PUB [Kennedy, 5 December 2018, page 24]. The Knight Piesold report, which contained information

that would have been useful to the PUB, was not filed and therefore was never seen by the public. Further, this report was critical of the Interconnected Option in several respects, but the public would not have known this because it was not filed at the PUB. Despite this, Dunderdale publicly stated in the House of Assembly that the Government relied on the Knight Piesold report as support for the Isolated Island Option [**P-00601, page 8**].

204. On January 5, 2012, at the request of Kennedy [**Wells, 25 October 2018, page 68**], Greene and Wells met with Kennedy. As a result of the Government's refusal to grant the PUB's requested extension, the planned technical conference did not take place and planned public hearings were shortened and limited (particularly in relation to a review of Nalcor's submissions, MHI's submissions, and the role of the Consumer Advocate) [**Greene, 24 October 2018, pages 55-57; Fred Martin, 25 October 2018, page 10; Whalen, 25 October 2018, pages 35-36**].

205. In late January 2012, the PUB received volume 1 (95 pages) and volume 2 (219 pages) of MHI's report. In February 2012, abbreviated public sessions were held by the PUB. Greene testified that following these sessions, the PUB worked intensely [**Greene, 24 October 2018, page 63**] and eventually submitted its report to Minister Kennedy, dated March 31, 2012, concluding that "...the information provided by Nalcor in the review is not detailed, complete or current enough to determine whether the Interconnected Option represents the least-cost option for the supply of power to Island Interconnected customers over the period of 2011-2067, as compared to the Isolated Island Option" [**P-00600**].

206. Following submission of its report, the PUB was criticized extensively and publicly by Dunderdale and by Kennedy [P-00601, page 8 and P-00728]. Whalen testified these comments impacted her personally and she took them as an expression of non-confidence in the PUB. Whalen also indicated she expected to be fired [Whalen, 25 October 2018, pages 40-41]. Wells testified that Dunderdale made a telephone call to him following release of the PUB report stating “I’m sick of you and your damn board. Now, you get this MHI thing straightened out right away” [Wells, 25 October 2018, page 73]. Both Greene and Whelan [Whalen, 25 October 2018, page 41] recall Wells informing them of this phone call shortly after he received it.

207. In the end, the PUB determined that it was not able to reach a conclusion on whether the Interconnected Option was the least-cost option of the two presented. Despite this, the Government proceeded with the Interconnected Option. A full PUB review did not take place, despite the benefits it would have offered. Ironically, the PUB reference was part of the Progressive Conservative Party Blue Book as part of its 2011 election platform, which became a failed election promise:

To determine that the Muskrat Falls project truly is the least-cost option for providing electricity to Newfoundlanders and Labradorians, two independent reviews of the project were commissioned: one by the Public Utilities Board and the other by Navigant, an internationally respected leader in the energy sector [Dunderdale, 20 December 2018, page 8].

208. Dunderdale was satisfied that she eventually got an answer from MHI as opposed to the PUB [20 December 2018, page 8]. This is not what was promised to the ratepayers. Nor is it satisfactory given the limitations placed on MHI and the editing of its report.

209. Thomas Marshall testified that the PUB should have been given an extension and allowed to complete the and that that had the extension been granted, a fulsome review could have been conducted [Thomas Marshall, 6 November 2018, page 14].

210. Kennedy was one of the more vocal defenders of the Project in the public sphere. Yet, he expressed at the Inquiry that he now feels disappointment and anger at having publicly provided information without knowing facts - like the changing of P factors or the existence of a P1 schedule [Kennedy, 3 December 2018, page 15-16]. However, if the PUB had been allowed to review the Project, Kennedy's current concerns would have been alleviated. The PUB could have uncovered all of this information prior to sanction. Kennedy chose to rely on Nalcor and MHI, rather than an independent PUB review. In fact, he chose to excessively criticize the PUB.

211. The evidence of Dr. Holburn is highly relevant to the benefits a PUB review could have provided. Dr. Holburn provided expert opinion evidence to the Inquiry on the issue of regulation and governance in the energy sector. While Dr. Holburn's entire report contains useful analysis, information and advice, his key findings are summarized in his report [P-00528, page 44]. A brief synopsis of some of Dr. Holburn's key statements follows:

- The exemption of the Muskrat Falls project from a full PUB review and oversight was not best practice.
- Robust, regulatory review could be a counterbalance to the kind of "optimism bias" that Flyvberg testified is common to energy megaprojects [Holburn, 23 October 2018, page 57].

- Consultant reports from entities like Manitoba Hydro International, Navigant, Ziff and others cited by the government in response to questions on pre-project review are input for consideration of an energy project, but not substitutes for an independent regulator's review [P-00528, pages 21-22].
- Unlike the NSUARB's unrestricted evaluation of the Maritime Link, the PUB was not able to undertake a wide-ranging, comprehensive analysis of whether Muskrat Falls was in fact the least cost option for providing long-term reliable power to the Island. The PUB was limited in time and left the Government not as informed as it could have been at the time of sanction about the costs and risks of the Muskrat Falls project relative to other alternatives [P-00528, pages 19, 44-45].
- The Newfoundland and Labrador government's approach to regulatory oversight of Muskrat Falls has not met the high standard that other provinces such as Alberta, Ontario and Nova Scotia have adopted [P-00528, page 44]. Regulatory agencies in these other provinces played central roles in evaluating, approving, monitoring and reviewing large electricity infrastructure projects. To date, these projects have largely been completed on budget and on schedule [Holburn, 23 October 2018, page 21].
- The PUB did not endorse the Muskrat Falls project as the least-cost option for meeting power demands. The provincial-federal Joint Review Panel formed for the project's environmental assessment did not endorse Muskrat Falls as the least-cost way to meet domestic demand requirements [P-00528, pages 19-20].
- The PUB would have had new information on load growth by 2013, potentially strengthening concern that "there is not an immediate need for the large incremental

supply associated with the Interconnected option (Muskrat Falls) and that Island electricity needs could be met in the short to medium term with available renewable sources on the Island and/or additional thermal generation [P-00528, page 45].

- It is likely that the PUB would have wanted to conduct its own investigation after the UARB's approval in November 2013 in order to understand the implications for the Muskrat Falls project [P-00528, page 46].
- The cost estimates in October 2012 were almost 20 per cent higher than the estimates the PUB was working with, which would probably have reduced the attractiveness of the interconnected option if analyzed in an unrestricted review [P-00528, page 46].
- If a review reached into 2014, it would have coincided with the dramatic collapse in global oil prices. The estimated difference in cumulative present worth between the Interconnected and Isolated Island options was quite sensitive to the oil price forecast used, making the timing of the PUB review potentially consequential [P-00528, page 46].

212. Dr. Holburn concludes his report as follows:

It is not possible to know with certainty how any of these factors, or combination of them, would have influenced the PUB's overall evaluation of whether Muskrat Falls was the preferred option compared to other alternatives in the context of a hypothetical review – but they could have reduced the probability of the PUB finding in favour of the project. If the PUB had publicly concluded after a comprehensive review that Muskrat Falls was not needed at that time or was not the lowest-cost alternative, it would have been more difficult for the government to justify a sanction decision. Even if the government had still decided to proceed, allowing the PUB to review project costs and to assess prudence could have contributed to better cost containment and on-time delivery during the construction stage [P-00528, page 46].

213. If all information had been put before the PUB, the overruns and delays – and maybe sanction – could have been avoided. Quite simply, once all the information was put to Grant Thornton for

its forensic audit, there were factual revelations which would have been uncovered earlier by the PUB. Julia Mullaley (“Mullaley”), a Government bureaucrat and former Clerk of the Executive Council, acknowledged that a PUB review could have revealed the existence of any capital cost increases and therefore any issues of non-disclosure by Nalcor to the Government would not have been an issue [Mullaley, 30 May 2019, page 37].

214. Furthermore, if the PUB could not decide the least cost between the two options presented by Nalcor, then it certainly was not given the time or resources to answer the right question mandated by the EPCA – the lowest possible cost consistent with reliable service. More than two options should have been put before the PUB. In Nova Scotia, there was no such limitation.

*Section 4: Whether the government was fully informed and was made aware of any risks or problems anticipated with the Muskrat Falls Project, so that the government had sufficient and accurate information upon which to appropriately decide to sanction the project and whether the government employed appropriate measures to oversee the project particularly as it relates to the matters set out in paragraphs (a) to (c), focusing on governance arrangements and decision-making processes associated with the project*

215. Manipulation of Information: Nalcor made efforts to revise and manipulate reports to ensure the Interconnected Option looked preferable. The independence of any such reports are therefore questionable.

216. One example is Nalcor’s dealings with Westney Consulting. Harrington wanted references to “tactical and strategic risk” removed and replaced with the general term “appropriate risk analyses”; he wanted the word “recommendation” changed to “observation” in relation to

management reserve and schedule reserve ; he wanted to remove the reference to megaprojects being subject to “substantial cost overruns and schedule delays”; and finally, he removed a statement that adequate management reserve and schedule reserve be “included” in the sanction cost and changed it to these being “recognized” in the sanction cost [P-00508]. These changes may be subtle but show that Harrington made an effort to (1) change an independent report; (2) change it in a way to keep costs estimates as low as possible.

217. In the MHI report at DG3, MHI does not indicate that a review of Nalcor’s approach to strategic risk had been conducted. The MHI report states “...sufficient contingency has been allocated to this portion of the project to offset any unforeseen project risk” [P-00058, page 39] which would likely cause a reader to reasonably conclude that all project risk had been accounted for when it had not been. Nalcor’s 1% chance of delivering first-power in July 2017 was also kept from MHI, which again confirms that the so-called independent review by MHI was neither robust nor fulsome. Westney’s work at DG3 [P-00821] was also not provided to MHI. Essentially, if MHI did not come looking for a document, Nalcor did not provide it. MHI provided an opinion when it did not have – and apparently did not ask for – relevant information.

218. Westney gave evidence comparing the IPR review to others that he had done, and he said it was on a very short timeframe, a very pointed list of questions that did not permit general feedback. On a 1 to 15 scale he put this IPR level of review at about a level 1. He wanted to point this out to the Commissioner in his evidence because he had been watching the evidence being presented at the Inquiry, and he had been surprised at the level of reliance or focus that various witnesses have put on the IPR review [Westney, 6 November 2018, page 29].



219. Nalcor consistently made efforts to keep public disclosure of public information to a minimum.

An example is an E&Y Oversight Committee report. Cabinet decided to publicly disclose the in September 2015. Subsequent to this decision, Nalcor officials stepped in and insisted the report should not be released due to commercial sensitivity. The public was therefore denied the opportunity to see this report at a critical time – the 2015 Provincial general election. Nalcor was driving the agenda, and not government officials. Ultimately, it was the decision of Premier Davis not to publicly release the report [Mullaley, 30 May 2019, page 39].

220. Nalcor also internally made decisions to make the Interconnected Option preferable. For example, certain costs were apportioned on a 70/30 basis between Gull Island and Muskrat Falls and therefore not included in the \$6.2 billion estimate for Muskrat Falls Project at DG3 because they were assigned to Gull Island. Examples include the Impact Benefits Agreement (the “IBA”) with Innu Nation, certain environmental assessment costs and feasibility studies. [Kean, 8 November 2018, page 130; Harrington, 19 November 2018, pages 80-82; Bennett, 26 November 2018, page 48]. The Muskrat Falls Project could not have proceeded without environmental assessment or the IBA and so it was inappropriate to artificially “apportion” 70% of these costs to a project that may never come to fruition. Sturge testified he was uncomfortable with apportioning costs to Gull Island and it made no sense to him to do so if Gull Island was not developed. Other examples of Martin looking to optically minimize the costs of the Muskrat Falls Project, all of which Sturge either was not comfortable with and/or felt made no sense, were using export revenues to offset capital costs, not including foreign exchange costs and not including Transition to Operations in AFEs [Sturge, 27 March 2019, pages 79-80].

221. **Oversight Committee**: Discussions about establishing an oversight committee began in April 2012 [P-03439], but one was not established until February 2014. In a December 2012 email exchange between Thompson and Bown, Thompson told Bown that ideally an oversight model would be established simultaneously with “the bill” (presumably Bill 61) and to “keep working the issue” [P-01129]. When asked why an oversight model was not established, Bown testified that he and his staff were occupied working on Bills 60 and 61, and dealing with the arrangements between Nalcor and Emera and with the Government of Canada. As a result, by December 2013, they “had run out of time” to put oversight in place [Bown, May 16, 2019, pages 53-54].

222. Oversight was not a priority, however, a Department of Natural Resources Information Note summarizes provided by external consultants Robert Noseworthy of Power Advisory LLC (“**Power Advisory**”) referring to the importance of oversight in the context of the ratepayers:

Oversight

- Mr. Noseworthy agrees that the Project can’t be regulated under the current PUB system, but there has to be significant and meaningful independent oversight of the costs related to the project given the level of expenditures.
- With the ratepayer being required to cover all costs incurred on the project, it is incumbent on the province to ensure that costs are independently reviewed and released to the public in a report.
- Mr. Noseworthy questions the difficulty of distinguishing the Project from the rest of NL’s transmission system. He also questions how long the Project can be distinguished from the rest of NL’s transmission system? For the full 50 years?  
[P-03440, page 2]

223. Once it was eventually established in 2014, the Oversight Committee was staffed entirely with senior civil servants and so in that sense, it was not “independent” from the Government. Its

role was not to carry out the type of oversight envisioned by Robert Noseworthy of Power Advisory, but instead to primarily focus on “how the project was performing against the budget itself and how the schedule was moving forward against the timeframes” [C. Martin, 3 June 2019, pages 69-70]. The newly established committee also lacked expertise in critical areas such as megaprojects and engineering. Bown testified that E&Y was engaged to address these gaps in the Oversight Committee, but it was not until January 2016, almost two years after it was established, that the Oversight Committee requested E&Y to do a detailed analysis in to the Project cost and schedule [Bown, 15 May 2019, pages 28-29].

224. Once established, the Oversight Committee had difficulty getting information from Nalcor, according to Stanley [Stanley, 22 October 2018, page 14] and former Oversight Committee Chair Craig Martin, especially after E&Y was engaged [C. Martin, 3 June 2019, pages 26-27]. Michael Kennedy of E&Y stated Nalcor simply did not want anyone reviewing its work. Nalcor attempted “to take a minimal interpretation on [E&Y’s] mandate such that it renders an effective assessment almost impossible” [P-3328]. Harrington was described as dismissive and bordering on rude [P-03286] and even left a meeting he was asked to attend and refused to answer questions about the project [Michael Kennedy, 13 May 2019, page 26 and C. Martin, 3 June 2019, page 29]. Harrington’s view of the E&Y review was that it, for some reason, was a “very serious issue” and said “unless we put a halt on the e and y push to be a shadow IE and will be screwed” [P-03650]. Harrington took it upon himself to dictate what would be disclosed to E&Y, despite the shareholder retaining E&Y for the purpose of the oversight committee [P-04039]. Nalcor was again trying to control the flow of information.

225. As a result of all the manipulation, nobody – not the PUB, MHI, IPR, Navigant, Government Oversight Committee – did a truly independent review of Nalcor’s approach and decisions with respect to strategic risk/management reserve or schedule risk and cost estimates. The failure to conduct an independent review of the DG3 cost estimate and schedule, despite the assertion by the Government to the public, was admitted by Minister Derek Dalley [Dalley, 27 February 2019, Page 15] and Bown [May 15, 2019, pages 27-28] despite telling the public otherwise [P-03505]. Thomas Marshall and Skinner recommended a full, independent review – but this was never done [P-00807]. Thomas Marshall felt that the referral to the PUB was sufficient to satisfy this recommendation – but of course the PUB was never given time to complete its review. At no time during the course of the Inquiry did anyone state that any other review was sufficient to meet what was recommended in the May 2011 decision note which recommended a full, independent review of the Project [P-00807].

226. **Nalcor in Charge**: In terms of the overconfidence factor referenced by Professor Flvybjerg, there was little to no analysis conducted by the Government of the day; rather, it simply relied on the Nalcor executive to provide updates on the Muskrat Falls Project both before and after sanction.

227. Updates were typically provided to the Government in the form of PowerPoint presentations. Cabinet Ministers were satisfied with verbal updates that the project was on time and on budget and that the Nalcor executive and the PMT informed that there were “cost pressures” but they were doing their best to “mitigate” – and that is as far as the analysis went. Finance ministers did not receive budget-to-actual financial updates [Thomas Marshall, 1 April 2019, page 92].

228. Throughout the Inquiry, Cabinet Ministers, Premiers and bureaucrats expressed their ongoing confidence in the individuals at Nalcor, and this confidence was blindly given. There was very little data, written reports, statistics or information of any kind provided by Nalcor to members of the Government or the bureaucracy. Detailed reports were never provided; just summaries and bullet points and face-to-face meetings [Dalley, 27 February 2019, page 63]. It seems members of the Government were content to receive the limited information that a PowerPoint presentation could provide.

229. Nalcor executive bypassed the Department of Natural Resources and would deal directly with the Premier's office. As a result, bureaucrats and even Ministers were not fully informed. Stanley testified that the numbers that came from Nalcor were in a "black box", meaning there was no transparency behind the numbers. While Stanley would have expected the Departments of Finance and Natural Resources to review the numbers [Stanley, 22 October 2018, pages 5-6], this was not the case. While normally, a Crown agency would go through the responsible government Department, Nalcor was treated differently, sometimes resulting in situations when decisions were made of which operational people were unaware [Stanley, 22 October 2018, page 6]. While Ministers may have been in the loop on occasion, members of the civil service were not and this led to resentment [Stanley, 22 October 2018, page 76]. Nalcor, as a result, was described as a "fiefdom" and a "runaway train" [P-00790, pages 19 and 21].

230. Stanley commented as follows:

Government was clearly a – not a cheerleader – a proponent of the Muskrat Falls Project. The individuals from Nalcor who are also at the same operational level also knew government was a proponent of the project, and therefore, when the individuals from Nalcor called over with what they perceived to be what they needed in order to move forward on any particular issue – without getting into specifics – the perception, I think, on the part of the people from Nalcor was that well, government would do whatever government could do to meet Nalcor's needs [Stanley, 22 October 2018, page 11].

231. Nalcor had been given the utmost trust by government officials due to the fact Nalcor was viewed as part of government. Bown said it was “treated like it was inside of government” [Bown, 6 December 2018, page 24]. Thomas Marshall said in many ways, Nalcor was “like a government department” [Thomas Marshall, 6 November 2018, page 9]. As a result, government chose not to provide the necessary oversight. Dalley stated that government “relied heavily on [Nalcor's] facts and their work believing that, obviously, we were on the same side. We were working together to try and address a major issue in the province and felt that the information we were getting was accurate” [Dalley, 27 February 2019, page 20]. Bown testified that Government “ran out of time” to implement oversight [Bown, 16 May 2019, pages 53-54].

232. The Government was complicit in allowing Nalcor to move the Project forward at all costs and without questioning anything Nalcor was doing. While Nalcor may not have disclosed vital information to the Government, the Government did not seem concerned with asking any of the necessary and required questions. This led to a situation where Nalcor felt it did not have to fully update the government on a variety of issues concerning the Project. As a result of lack of disclosure, it was clear that the politicians were out of the loop. Sturge's notes state that on 10

December 2012, it was “really hitting me how little some of the political folks know about the deal” [P-00879].

233. Even at financial close – when Nalcor did not provide the full capital cost update to the Government regarding a \$300 million increase – Mullaley stated that all that was discussed during that time was that Nalcor was “mitigating” any risk. There was no substantive analysis by government. The conversation at financial close was as simple as “we were always told that, look, we’re mitigating – we’re mitigating; we’re addressing it. Yes, there’s pressures. It’s still in control. The schedule is on control. The cost is in control.” Mullaley’s perspective is that there was “almost second set of numbers are here that no one ever knew about. And – but those questions were being asked, but they weren’t honestly being answered” [Mullaley, 29 May 2019, page 16-17].

234. After financial close, with the financing costs known as well as a \$6.531 cost estimate, James Meaney (“Meaney”), Nalcor Vice President of Finance, Power Supply, began preparing an AFE memorandum for the Board meeting on March 21, 2014, and was told by the PMT to include in the AFE memo a recommendation for contingency or management reserve of \$418 million [P-02412]. Meaney provided a draft memo to Bennett and Martin in early March with this \$418 million contingency, but this memo was not presented to the Board at the March 21, 2014 meeting. This was Martin’s decision. Meaney testified Martin had “absolute control” and Sturge likewise testified that Martin had control over the release of cost and schedule information. Both

Meaney and Sturge confirmed Martin had to approve any cost and schedule updates before they could be given to the Board, NL Government, IE, or Canada. [Meaney, 22 March 2018, pages 7-9].

235. Even when Martin eventually authorized a cost update of \$6.99 billion to the Board for the June 2014 meeting and then to the public, it was not an accurate cost update. As of May 2014, the PMT had prepared an FFC of \$7.5 billion [P-01677, page 21]. Martin's reasoning for not telling the Board of the \$7.5 billion figure was that he would not provide the Board with a cost update until there was an AFE. In his evidence, Martin referred many times to not providing information to Government until it was "decision level"/"decision grade". Martin offered no credible explanation why it took so long to get to the point of an AFE after receiving so many FFCs showing costs in excess of \$7.0 billion. While Ken Marshall was reluctant to blame Martin, he did acknowledge that even if the FFCs were estimates and even if an AFE had not been finalized, Martin could have told the Board, "look, we're doing an AFE. Here's the information. I think it's high and the reason I'm recommending a lower number is such and I just want you to be completely in the loop." [Ken Marshall, 10 June 2019, page 41].

236. Given that financial close was a major event, it is strikingly concerning that Cabinet Ministers did not press for more information at this stage. There was so much confidence in Nalcor that no questions were asked. It was such a non-issue that Davis does not remember anything specific about the Cabinet meeting pertaining to financial close and specifically what questions were



asked of Nalcor [Davis, 26 February 2019, page 105], nor does Dalley [Dalley, 27 February 2019, page 59]. Mullaley also did not “recollect specific questions of that day” of financial close at the Cabinet meeting [Mullaley, 30 May 2019, page 37]. Cabinet Ministers, who now say they were unaware of the \$300 million capital cost increase at financial close, attended a press conference at that time when Dunderdale, the Premier, and Martin, the CEO, spoke of cost pressures. How is it that they were comfortable with the fact cost pressures existed, yet they believed there had been no capital cost increases?

237. Not only was there lack of disclosure from Nalcor executive and PMT to government (and to the public), but even within the Nalcor executive, there was only a small circle of people who had full knowledge and transparency into the financial situation of Muskrat Falls. Sturge was not aware of the removal of \$500 million strategic reserve from the project sanction costs, nor was he aware of the P1 schedule. Not only was he unaware of the amount of management reserve, he was not even aware that there was a management reserve: I never did know we had one if we did have one [Sturge, 31 October 2018, page 60-61].

238. Sturge testified that he was frustrated with being kept out of the loop. Sturge made notes calling the approach to the capital cost review of Muskrat Falls “very strange” and that the Nalcor finance team had not seen the DG3 cost estimates because “Ed/Project Team are keeping them close” [P-00877]. This was on 8 August 2012. Sturge became aware there was a management reserve which had been quantified upon reading the Grant Thornton forensic audit. All he knew

at the time of sanction was simply that GNL would fund cost overruns “through continued equity” [Sturge, 31 October 2018, page 62].

239. Meaney and Sturge testified they were not aware until seeing the Grant Thornton Phase 2 report that the PMT had prepared multiple FFCs in the months leading up to financial close showing a cost in excess of \$6.2 billion, including a \$7.0 billion FFC as early as July 2013 and a \$6.9 billion FFC in August 2013. Meaney’s and Sturge’s evidence was that the finance team (Meaney, Sturge, Warren) were regularly requesting project cost updates from Bennett and Martin, but did not receive an update until November [22 March 2018, pages 2-4].

240. **Lack of Oversight**: The approach taken by the Government in delegating its responsibilities to Nalcor resulted in a lack of oversight. There was overconfidence in the Muskrat Falls Project and the individuals responsible for it; Westney testified that risk assessments were ignored because of optimism: “Purely optimism – they assume that what happened to other projects won’t happen to themselves” [Dodson, 25 February 2019, page 29]. Bennett acknowledged that one way to mitigate the inherent bias and conflict of interest arising from having individuals who want to see a project proceed but who are also responsible for preparing the information upon which a decision to proceed will be made is to implement independent oversight [Bennett, 26 November 2018, page 86].

241. There were issues with the Nalcor Board of Directors that resulted in oversight failure. There was no issue with any of the individual members of the Board. However, the Government had the ability to add members to the Board to create a robust group for oversight but chose not to do so. Sturge testified as follows:

cause I think the board members we had there did a good job, but I think clearly the board was too small and probably didn't have a broad enough range of skills. And I think the board recognized that [Sturge, 31 October 2018, page 78].

242. The small board was not in line with best practice. Lacking the necessary numbers and experience resulted in "questions as to the ability of a board to effectively challenge management, and act in a capacity of providing informed expert oversight and providing that forum for sober second thought" [Holburn, 25 February 2019, page 71]. The Board members were placed under enormous stress to handle a significant workload without enough members to share the load, and the members lacked the necessary expertise in megaproject management and construction. Their plea for more members, more specialized expertise, and pay for their time, fell on deaf ears.

243. There was also an absence of internal oversight committees. There was a recommendation from Independent Project Analysis ("IPA") recommendation to establish a steering committee, one was not established [Bennett, 26 November 2018, pages 22-28]. The information from IPA was that projects without steering committees are generally less successful. While an LCP Executive Committee was established, it was not successful as people did not show up to meetings and decisions were made before meetings took place [Bennett, 26 November 2018, pages 28-29].

244. Analysis at Financial Close: As noted above, Nalcor did not disclose information to the shareholder. This arguably had the most prevalent effect at the time of financial close when there was a known capital cost increase of \$300 million. Nalcor was aware of this increase but some members of the civil service and politicians, including Cabinet Ministers, were not. Members of the government were also not aware the contingency had been exhausted by April 2013; that bids had come in above the estimates in the amount, at financial close, of \$600 million; and that cost estimates were \$7.0 billion in July 2013. There should not have been confusion and sporadic disclosure of this type of vital information. Reporting procedures should have been established to ensure it was not possible for some within Government to be aware of it and others not.

245. Financial close was essentially the last opportunity to review the cost estimates and schedule and determine if the project should proceed. In fact, at financial close, the project was already delayed six months [P-01677, page 17]. The red flags at financial close were plentiful, yet the decision to proceed was made.

246. Grant Thornton states that at financial close, contracts had been awarded that exceeded the cost estimates by \$599,000,000. As early as April 2013, well in advance of financial close, the \$373,000,000 contingency that had been allocated was exhausted. Therefore, Government and Nalcor proceeded with this project with no contingency remaining and with contracts still to be awarded [P-01677, page 11]. At that point in time, the trend was for the contracts to be awarded

at a higher amount than the estimates and there was no reason to think this trend would not continue. Thomas Marshall recognized this fact during the Inquiry when he stated that knowing one of the estimates (Astaldi) was off by \$250 million would have raised some signs that the numbers should be revisited because it could be an indication of a trend, which “as it turned out, I think it was” [Thomas Marshall, 1 April 2019, page 95].

I’m saying that, as a prudent businessperson, when you realize that your estimate is basically wrong, maybe you have to put the brakes and go back and sit and think about this and maybe rerun the numbers [Shaffer, 20 February 2019, page 62].

247. James Gilliland testified that if contingency is consumed in the early stages of a project, there still needs to be a contingency assigned for later stages of construction because is not possible to go through the duration of the project without having unforeseen items come forward [Gilliland, 21 March 2019, page 21].

248. There was clear analysis well in advance of financial close that the project cost estimates were incorrect and well below where the cost of the project was going to end up. In July 2013, the estimate of project cost was \$7.0 billion – known by the PMT and the Nalcor executive [P-01677, page 11].

249. Certain individuals within the Department of Finance appear to have been aware that the capital cost had increased by \$300 million to \$6.5 billion, yet nothing was done about this and no concerns were raised. It was not reported to Cabinet; and no additional analysis was done

regarding affordability or potential trends for further increases to the cost. There was an abdication of duty.

But as I said before, I think what really bothered me was I was seeing, you know, the emails through the disclosure documents and I was seeing reference to the \$6.5 billion in some emails where some of our senior officials in Finance, particularly, and Natural Resources were copied on, and I could see that. So that was the team we had in place for financial close [Mullaley, 29 May 2019, page 8].

250. We know none of the Cabinet Ministers were aware of the \$300 million increase in capital costs at financial close. Paul Davis believed the cost estimate at financial close was \$6.2 billion and only thought it increased as of June 2014 [Davis, 26 February 2019, page 36]. Derek Dalley had “no recollection of a number beyond \$6.2” billion at financial close [Dalley, 27 February 2019, page 7]. Dalley in fact was the Minister responsible for Nalcor at the time of financial close, yet had no involvement in the federal loan guarantee [Dalley, 27 February 2019, page 58]. Dalley, Minister of Natural Resources at the time of financial close, was not aware that contingency was exhausted and that the bids were \$600 million over the budgeted estimates.

**DALLEY:** I may have. I mean –you know, I used to ask questions from time to time. Probably discussions with the deputy about, you know, what’s this gonna cost and not have an accurate number. But I would say: For the most part, no, I wasn’t involved in the bid process or the numbers from a commercial perspective [Dalley, 27 February 2019, pages 59-60].

251. Thomas Marshall – **the Minister of Finance** at the time of financial close – was not aware capital costs had increased or that the contingency was exhausted by April 2013 [Thomas Marshall, 1 April 2019, pages 3 and 17]. Thomas Marshall did ask for an update on the capital cost near financial close – but the number disclosed to him by Nalcor via email from Auburn Warren was \$6.2 billion, on 1 November 2013 [P-02024]. A potential reason not to publicly disclose the

additional capital cost is because it meant the Government would have had to come up with these non-budgeted for funds, and it was unable to do so until the following fiscal year. Notes from Donna Brewer demonstrate this to have been discussed at financial close. What did in fact happen was the updated costs was disclosed in March 2014, in time for the new budget [Thomas Marshall, 1 April 2019, page 5] and [P-03498].

252. Mullaley also did not know about the \$300 million increased capital cost at financial close. In fact, it appears it was a conscious decision by Nalcor not to disclose the updated number:

So that's what we had looked at and there was nothing. There was absolutely no number of the 6.5 anywhere in any presentations and there were a number of presentations and, you know, including the CEO Stan – Ed Martin, sorry, was there as well doing presentations. So none of the presentations, none of the information had anything to do with that [Mullaley, 29 May 2019, page 8].

253. The resulting failure for this information to be disclosed means despite these warning signs that the project would exceed the \$6.2 billion estimate, an updated financial analysis, including a CPW analysis, was not performed. The capital costs were increasing, and there should have been an increase in the contingency amount as well. The CPW analysis and the actual cost of the project was not a priority at financial close; rather, what was taking place was the implementation of a government policy to build Muskrat Falls:

All I can guess is – tell you – give you the context of the day again on that; is that, you know, the project had been sanctioned, this was moving forward, there were no big stop-the-bus moments that had come in. It was government policy direction that officials were implementing, and faithfully implementing to get to the financial close, and the project for all intents and purpose – you know, there were contractors like Astaldi already on notice, there was a lot of money being spent. But I think it was implementation of government policy [Mullaley, 30 May 2019, page 37].

254. Confusion abounds around the issue of the \$300 million capital cost increase at financial close.

While not one Cabinet minister recalls this issue being discussed at a Cabinet meeting and not one Cabinet minister recalls being aware of this increase, Premier Dunderdale testified that not only was she aware of the increase, but she said she would have advised Cabinet of this [Dunderdale, 2 April 2019, page 4]. In fact, she stated that there was “no way that I would know and not tell my Cabinet. There’s no way that I would know and my minister would not know” [Dunderdale, 2 April 2019, page 92]. This demonstrates, again, the lack of any need felt by government to receive detailed updates from Nalcor and the risks resulting from a formal reporting mechanism as between Nalcor and Government. The feeling certainly appears to be to proceed with the project at all cost. Dunderdale was also aware – and was the only one aware – that contingency had been exhausted at financial close [Dunderdale, 2 April 2019, page 13]. This begs the question as to why she never insisted extra contingency be put into the budget for the project that had yet to award all the contracts. She was also aware at financial close that the most significant contract – Astaldi – was in excess of the DG3 estimate [Dunderdale, 2 April 2019, page 114]. She was told it would take a few months to determine whether the trend upward would continue – again showing a rush to proceed with the project given the risk at that time of increasing costs [Dunderdale, 2 April 2019, page 115]. There was comfort in Nalcor – rather than a financial analysis – that the project could be kept on budget, despite evidence to the contrary.

255. The confusion likely arose because Martin conflated the issues of CPW and capital costs by approaching it from what he termed a “value” perspective. Martin seemed to feel that even if capital costs had increased by \$300 million, the \$300 million in interest savings from the federal



loan guarantee meant it was acceptable to present the overall impact as essentially a wash, rather than keep the CPW and capital costs separate, present them to Government separately and let Government reach its own conclusion [P-03552 and Bown, 15 May 2019, page 63].

256. Sturge testified he would not have communicated it like Martin did in the lead up to financial close because Government were looking for capital cost updates, not CPW updates. [Sturge, 27 March 2019, pages 41-42]. Sturge gave Martin a “heads up” in a November 8, 2013 email [P-02529] that the Board may not be aware of the new \$6.5 million capital cost estimate so he would be prepared to speak to it. In that same email chain [P-02529, page 2] Martin questioned providing updated capital cost estimates in a slide deck presentation to the Board. Over the next week, there were more emails between Martin and Sturge regarding keeping the slides in the presentation to the Board or not [P-02531, P-02532], but ultimately Martin decided to remove them. At this point, Sturge testified he had a “heightened sense” Martin wanted those slides out and so he “even less apt to communicate it to anyone” [Sturge, 27 March 2019, page 44]. Sturge assumed Martin would speak to the updated capital cost figure when he met with the Board, but could not recall whether Martin did or not, but there was no reference in Sturge’s notes [P-02523] from the Board meeting of Martin doing so, nor is there any reference in the Board minutes from November 14, 2013.

257. Mullaley testified that she was shocked and “to a degree, very much angered” when she found out at the Inquiry that there had been project cost projections of \$7.0 billion prior to financial close. As a public servant, Mullaley recognized that while everyone was “pushing hard for

financial close, but you still had time to come in and have the – a real discussion around the merits of this, the challenges around this. And this is where some real solid analysis should have happened, I believe” [Mullaley, 29 May 2019, page 16]. Dunderdale also was unaware of the \$7.0 billion – and stated she should have been told about this because this number would have been “startling” to her [Dunderdale, 2 April 2019, page 13].

258. On October 18, 2013, Paul Myrden (“Myrden”), former Director of Debt Management with the Department of Finance, requested updated cost information from Nalcor’s senior finance team, including Sturge, on behalf of Thomas Marshall. The majority of Sturge’s evidence on this timeframe is contained in pages 29-39 of his March 27, 2019 transcript [Sturge, 27 March 2019, pages 29-39]. Sturge immediately forwarded Myrden’s request to Martin, who immediately forwarded it to Bown [P-02515].

259. On October 24, 2018, Sturge followed up with Martin and Bennett again requesting updated cost information. On November 1, 2013 Martin emailed Sturge to advise that Thomas Marshall was seeking the cost update [P-02519]. This was odd given that it was Sturge who was waiting on a cost update from the Nalcor executive and PMT. Eventually, on November 20, 2018, Auburn Warren sent an email to Martin containing a response to Thomas Marshall’s request for a cost update, with the cost still of \$6.202 billion [P-02520], which Martin should have known was not accurate, yet he allowed that information to be passed onto Myrden which he must have known would be passed onto Thomas Marshall. When questioned, Sturge’s explanation for not updating Thomas Marshall directly once Sturge found out the cost was no longer \$6.202 billion was that

he did not communicate directly with the Minister – his communications were through Myrden. Sturge said Myrden “absolutely” knew about the \$6.531 figure prior to financial close and referred to a November 22, 2013 email to Paul Morris and Myrden and an email from “Canada to the broad group” on November 25, 2013, which he said contained the \$6.531 number as proof Myrden knew of this figure. Sturge also testified Paul Morris would have known of the \$6.531 figure in the November 21 – 25 time period. While Sturge was uncertain whether Bown knew, it seems strange that Bown would not be aware if Morris was aware. Sturge testified he first learned of the \$6.531 figure on November 6, 2013 at a meeting with the IE, but did not pass on this information to the Province at that time explaining that any communication of an updated figure to the province would have to go through Martin.

260. Meaney [Meaney, 22 March 2019, page 15] and Sturge [Sturge, 27 March 2019, page 13] testified they were not aware until they saw the GT Phase 2 report (page 12) that prior to financial close, bids received from contractors exceeded the cost estimate by \$600 million and that the \$368 million contingency was exhausted by April 2013. In an update given to the Province dated June 14, 2013 [P-02350], Nalcor was still informing the Province the cost estimate was \$6.2 billion when the PMT and executive knew this was not true. The Nalcor finance team should have been made aware of this prior to financial close.

261. Not until seeing Grant Thornton’s Phase 1 report were Meaney [Meaney, 22 March 2019, pages 17-18] and Sturge [Sturge, 27 March 2019, page 11] aware of Westney’s advice for a P75 contingency versus a P50, that Nalcor executive excluded approximately \$500 million of strategic

risk exposure from the capital cost estimate for the CPW calculation, or that the PMTs schedule had a P1 – P3 probability.

262. Like Meaney and Sturge, Bown also testified [**Bown, 15 May 2019, pages 11-13**] he was not aware of the findings in the Grant Thornton phase 2 report that bids were coming in higher than forecast resulting in contingency being exhausted prior to financial close, that the schedule had P1 probability, or that several months before financial close the PMT presented an FFC to Martin of \$7.0 billion. Bown said this information shocked him and that it was information he should have been told by Nalcor. He acknowledged he received regular updates from Martin who did not give him these details, but instead referred to “cost pressures” that they were being managed. Bown testified that an email from Martin dated October 27, 2013 [**P-03542**] containing an update that was not true, although he believe it to be true at the time. Bown also testified that this email was typically how Martin updated him [**Bown, 15 May 2019, pages 54-55**]. Bown testified he was not told about the capital cost estimate of \$6.531 billion at financial close [**Bown, 15 May 2019, page 13**] despite there being communications between others with whom Bown worked closely in the lead up to financial close (i.e. Auburn Warren, Paul Myrden, Paul Morris, Donna Brewer), some of which Bown was copied on, and each of which contained reference to one or more of the following: a figure of \$6.531 billion; \$300 million increase; COREA; cost increases; [see Exhibits P-03474, P-03489, P-02482, P-02525, P-03478, P-02535, P-03613, P-03496]. Bown testified that notwithstanding all this, he thought the number was still \$6.2 billion at financial close. He said he cannot remember the exact moment he learned it was \$6.5, but if he had known that at financial close, he would have told the Premier and Minister Dalley billion [**Bown, 15 May 2019, page 24**].

There is no evidence of Bown getting upset or expressing disappointment with Nalcor post financial close when he says he found out about the \$6.531 figure.

263. **Independent Engineer – Pre-Financial Close:** According to Meaney, in the lead up to financial close, the remaining outstanding issues between Nalcor and the Independent Engineer, MWH Canada Inc. (“IE”), represented by Nik Argirov (“**Argirov**”) were: cost, contingency, schedule, Astaldi and the North Spur.

264. While the IE was paid by Nalcor, the IE’s obligation was to the Government of Canada and the lenders. The Government was neither entitled to rely on the IE’s reviews nor did it do so prior to financial close. According to Meaney, the Government did request a copy of the July 2013 draft IE report, which Nalcor posted in the data room to which certain people in Government had access, but Government did not request copies of any subsequent drafts or request to be updated [**Meaney, 21 March 2019, page 91**].

265. There were no communications between the IE and the Government and no request to the IE to provide the Government with copies of reports prior to financial close. When questioned about why Government did not receive copies of the IE reports, Bown replied that they were told by Nalcor they could not have them. Bown added that “in retrospect”, the Government “should have been more vigilant” [**Bown, May 15, 2019, page 35**]. The IE did not do a detailed review of cost and schedule, but rather only a high-level review to see if industry standards were followed [**Argirov, 19 March 2019, page 10**].

266. In carrying out its work leading prior to financial close, the IE was not aware that:

- Nalcor Executive knew in September 2012 (close to sanction) that it was working from a P1 schedule [Argirov, 19 March 2019, page 18];
- In September 2012, there was a recommendation to Nalcor to include \$497-million for strategic risks in a management reserve based on a P50 confidence level [Argirov, 19 March 2019, page 19];
- In July 2013, the PMT had an FFC of \$7.0 billion that had been provided to Nalcor executive [Argirov, 19 March 2019, page 20]; and
- In August 2013, the PMT had an FFC of \$6.9 billion that had been provided to Nalcor executive [Argirov, 19 March 2019, page 67].
- At financial close, that the the cost estimate had increased by \$300 million from \$6.202 billion [Argirov, 19 March 2019, page 39].

267. Argirov confirmed the IE should have been made aware of all of this information by Nalcor during its review prior to financial close.

268. As late as September 24, 2013, there was a growing problem with respect to the information on cost estimates and schedule information not being provided by Nalcor. The problem persisted into October and November resulting in Manzer ultimately preparing a matrix [P-02193] to assign responsibility for providing documents. While the provision of documents improved, it was an issue that continued right to the end of financial close [Argirov, 19 March 2019, pages 33-36] [P-02198, P-02194, P-02196, P-02232 at page 171].

269. An email exchange in November 21, 2013 between Meaney and Manzer illustrates the gravity of concern on the part of Canada with respect to cost and schedule just days before financial close [P-022223]. Manzer communicated Canada's concern about the importance of ensuring the Government was fully informed stating "Canada is concerned to be assured that NL is fully aware of this given the equity – that is of the cost increases there is a perception of run away increases and maybe some elements of withholding that – nip that in the bud I say".
270. It appears there were six draft IE Reports in 2013 (March, July, October, November 15, November 27, and November 29) with the IE's final report being dated December 30, 2013 [P-01930]. This final version contained watered down comments from the IE with respect to Nalcor's approach to contingency [P-01930, pages 108, 112, 113]. In the November 15, 2013 IE Draft Report [P-02232, page 172] it refers to Nalcor qualifying the DG3 estimate as an AACEI Class 3 effort. The report indicates the IE agrees with this classification and confirms the implied accuracy range (-20% to +40%), however, it states that a Class 2 AACEI-compatible cost estimate is required at the time of financial close [Argirov, 19 March 2019, page 47]. A Class 2 AACEI-capital cost estimate was, however, not done for financial close. This wording was ultimately removed from the November 29, 2013 IE Report [Argirov, 19 March 2019, page 48].
271. Further, in the November 15 and 27 draft reports, the IE expressed an opinion that Nalcor's scope contingency was aggressive compared to other similar remote heavy-civil construction endeavours that typically have double or quadruple the contingency as Nalcor. The IE draft report also indicates that due to significant overruns recently recognized with the award of the

Astaldi contract, the project contingency fund was considered to be spent at this time and unavailable for future unknowns and risks associated with the field construction phase for all sub-project elements of the multi-year project [Argirov, 19 March 2019, pages 47-48 and P-02232, page 172]. Meaney acknowledged that the only version of the draft IE report provided to Government (July 2013) did not contain the comments about concern with contingency. After extensive questioning, Meaney ultimately acknowledged all draft IE reports should have been provided to the Government [Meaney, 21 March 2019, page 101].

272. Argirov testified that Nalcor's schedule was "more just very overall without critical paths" and that Nalcor was expecting to fill more details by receiving the detailed schedules from the contractors [Argirov, 19 March 2019, page 37]. As of November 19, 2013, Nalcor still did not have a proper cost estimate and there were still schedule issues [P-02216]. Argirov testified this was unusual so close to financial close. In the November 15, 2013 draft report, the IE states the schedule is a simplistic Gantt chart without activity linking, critical path(s), float time, etc., and is not suitable to the level of detail the IE required. The IE indicated a P6 classic CPM view of the project schedule was required for it to provide its opinion, but Argirov confirmed a P6 classic CPM was never provided [P-02232, page 297] [Argirov, 19 March 2019, pages 50-51].

273. Nalcor attempted to satisfy the IE that schedule concerns were resolved [P-02233] going so far as to say the LCP schedule is "very achievable and realistic" and setting out critical path milestones [P-02233, page 27] that Nalcor must have known were very aggressive, despite



knowing Westney Consulting's opinion that it was between a P1 and P3 probability, which the IE was not aware of.

274. Dunderdale trumpeted the IE's support for the Project despite the fact the IE's review was high level only and did not include any detailed analysis of cost estimates or schedule. What is also known is that there was relevant information that was not shared with the IE. In the lead up to financial close, Nalcor was making decisions not to provide certain updates to the IE, the Government and their professional advisors. [see P-02228, P-02217, P-02184]. Having all of the relevant information may have changed the IE's decision to consent to financial close.

275. **Independent Engineer – Post Financial Close:** The Muskrat Falls Project Value and Cost Update for Government of Canada/MWH, June 20, 2014, [P-02257 page 21], contains a reference to \$6.99 billion, which was the first time the IE became aware there had been a revised capital cost estimate from the initial \$6.2 billion [Argirov, 19 March 2019, page 67]. Argirov agreed the IE should have been made aware sooner based on the information contained in the Grant Thornton Phase 2 report. Argirov testified he expressed he was surprised and disappointed when he learned of this cost update [Argirov, 19 March 2019, page 68].

276. Meaney testified that in February 2015, Martin was provided an update showing a need for a revised AFE of \$7.49 billion, but rather than immediately notifying all stakeholders, Martin proposed a timeline for release whereby he would consult with the province in April 2015, notify the oversight committee in May 2015, seek Board of Director approval in June 2015, notify the

IE in June 2015, and notify the public in July/August 2015 [Meaney, 22 March 2019, pages 67-69]. Martin did not maintain this schedule and no revised AFEs were presented to the Board of Directors in June. Meaney's understanding is that Martin delayed the cost update to September after he and Bennett would meet with Premier Davis. Over the course of 2015, the AFE requirement continued to grow such that by August, "AFE Rev 2" was \$7.65 billion, which was communicated by Meaney to Martin [P-02412]. In August, Martin sought more information from Meaney on the \$7.65 billion proposed AFE to prepare for his meeting with Premier Davis. Meaney's understanding is that the Premier was updated in August, but at that point, Canada and the IE were still not aware of the \$7.65 billion figure [Meaney, 22 March 2019, pages 102-104].

277. Post financial close, Nalcor was required to provide the IE with monthly project monthly construction reports containing a reasonable estimate of cost updates as opposed to an AFE figure. Bennett was signing construction reports to the IE containing "cost to complete" information that was not accurate [Meaney, 22 March 2019, pages 117-123]. Between June 2015 and October 2015, the figure of \$6.99 billion was the figure included in all monthly construction reports [Meaney, 25 March 2019, pages 1-2]

278. Moreover, Meaney acknowledged that even the \$7.49 billion figure was low because it did not factor in cost increases from schedule delays (which were a certainty at that time), acceleration or change in milestone dates, and the Astaldi situation [Meaney, 22 March 2019, pages 71-72].

279. Meaney was at a meeting with Argirov in Toronto on May 27, 2015 and did not inform him of the proposed revised AFE or \$7.5-\$7.6 billion because he did not have authorization from Martin [Meaney, 22 March 2019, page 96]. In September 2015, the IE and Canada were advised of another cost update to \$7.65 billion. Argirov testified they were quite surprised and upset (as was Canada) at this significant increase [Argirov, 19 March 2019, pages 17, 81]. Nalcor knew long before September 2015 that costs were increasing significantly [P-01677, pages 18-23]. This September 2015 cost update resulted in Manzer writing a strongly worded letter to Nalcor [P-02290] mandating Nalcor to be more forthcoming or there would be serious consequences, including the possibility of holding back IE approval of monthly draws.

280. **Transition to New Government Administration:** Cathy Bennett testified that upon being sworn in as Minister of Finance in 2015, it became “very clear very quickly” that Department of Finance officials did not have a sense of confidence and comfort in the material and the information they had from Nalcor and there was “a significant communication chasm...that had been in place for a long time or had grown with the Finance officials particularly”. Referring to her understanding of the *Financial Administration Act*, she stated that it provided the ability to question all government departments as well as agencies, boards, commissions and Crown corporations, and in this regard, Cathy Bennett’s view was the Department of Finance had ultimate financial accountability. However, she opined that this responsibility had not necessarily been met for a number of years prior to her arrival at the Department of Finance [Cathy Bennett, 11 June 2019, pages 7, 10, 13, 45-47]

281. Cathy Bennett stated further that it also became evident that the Treasury was under significant stress and there was a need to move “very quickly – very quickly – to do something to correct that” [Cathy Bennett, 11 June 2019, page 6]. The Province’s inability to meet its COREA account payment due December 14, 2015 was a symptom of the Province’s dire financial situation and a contribution to the need for a second federal loan guarantee [P-02408].

### ***Conclusion***

282. The decision to sanction and ultimately proceed with the Muskrat Falls Project should never have occurred; the construction and oversight of the Project’s progress and costs were lacking; the exemption from oversight by the Commissioner of Public Utilities was never justified; and the Government was never fully informed in relation to details of the Muskrat Falls Project. Furthermore, the Government never sought appropriate levels of details and information, thereby deferring the governance of the Muskrat Falls Project to Nalcor which was an abdication of the Government’s responsibility to the people of the Province. As a result, the ratepayers of the Province will not have the lowest possible cost power consistent with reliable service and rate mitigation is required if there is to be affordable electricity.

**ALL OF WHICH IS RESPECTFULLY SUBMITTED ON THE 9<sup>th</sup> DAY OF AUGUST, 2019**

  
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**John Hogan**  
Counsel for the Consumer Advocate  
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**Christopher Peddigrew**  
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**SUBMISSION OF THE CONSUMER ADVOCATE**  
**TO THE COMMISSION OF INQUIRY RESPECTING**  
**THE MUSKRAT FALLS PROJECT**  
**IN RELATION TO RECOMMENDATIONS**

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Further to the oral submissions presented by the Consumer Advocate to the Commission of Inquiry Respecting the Muskrat Falls Project, the Consumer Advocate submits the following in writing, as requested by the Commissioner:

- (i) There was never a fulsome and thorough independent analysis of Muskrat Falls Project costs, or to what extent the Province of Newfoundland and Labrador could afford any cost overruns, and if so, to what extent. The Consumer Advocate recommends that the Government of Newfoundland and Labrador (the “**Government**”) consider creating a legislative budget office that monitors and reviews spending. This would be similar to the Parliamentary Budget Officer at the federal government level whose mandate is to provide independent analysis on the state of the nation's finances, the government's estimates and trends in the Canadian economy; and upon request, estimates the cost of any proposal under Parliament's jurisdiction.
  
- (ii) The Muskrat Falls Project was sanctioned following a private member’s motion in the House of Assembly, thereby limiting open and public debate. The Consumer Advocate recommends that Crown corporations appear before the House of Assembly to answer questions prior to the Legislature approving expenditures, to

a certain threshold, and that all approvals, estimates, water resource issues, pre-conditions and Indigenous issues be obtained and finalized before the Legislature consider any such expenditure.

- (iii) Ole Jonny Klakegg provided the Commission with evidence that models exist throughout the world where, for the purpose of external quality assurance, a team of experts who are independent from a proposed project are used to review the project prior to any sanction decision. The Consumer Advocate recommends that this practice be adopted in Newfoundland and Labrador with specific reference to, when there is a proposed utility project, the independent reviewers should have no affiliation with other utilities that are engaged in similar projects elsewhere.
- (iv) During the public debate at the time of sanction, Nalcor was actively engaged in the debate to support and justify the Muskrat Falls Project. Members of a Crown corporation should be permitted to publicly explain and answer questions related to a project, but it is not necessary for a Crown corporation to attempt to sway public opinion. The Consumer Advocate recommends that Crown corporations be prohibited from engaging in public debate or advocating for approval of its project.

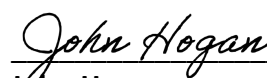
- (v) 2041 is approaching and there is concern regarding next steps in the process.

Therefore, a plan needs to be developed now regarding 2041 negotiations with Hydro-Quebec. The Consumer Advocate recommends that a panel – chosen by the Independent Appointments Commission – be established consisting of the necessary expert from the areas of engineering, finance, the law, etc. to prepare for 2041 and to make recommendations to the Government as to how to go forward, which may include the panel having discussions directly with Hydro-Quebec.

- (vi) The Consumer Advocate recommends that there be consumer representation on the Board of Directors for Nalcor and for Newfoundland and Labrador Hydro, which representation should be chosen through the Independent Appointments Commission.

- (vii) The Consumer Advocate recommends the implementation of integrated resource planning co-ordinated through the Public Utilities Board, to the extent it may still be beneficial.

**ALL OF WHICH IS RESPECTFULLY SUBMITTED ON THE 15<sup>th</sup> DAY OF AUGUST, 2019**

  
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